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Habitat Restoration Project

The Renewing the Alde Project

Final report for the Suffolk trial area

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August 1999

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Preface

This report summarises the work of the Habitat Restoration Project in Suffolk from 1996 to 1999 - The *Renewing the Alde Project*. The comments made and conclusions reached are based on the actual experience of the Project but would not necessarily be repeated in other places during other time frames. Common themes and contrasting approaches across the four trial areas will be established when comparisons are made between *Renewing the Alde* and the other project areas. Consequently the views expressed here are not necessarily those of English Nature but will make a useful contribution to developing that view.

Rachel Thomas

September 1999

1. Executive summary

The Habitat Restoration Project was initiated by English Nature in 1996 to find out if habitat fragmentation and degradation could be reversed by targeting the current range of environmental land management schemes.

The Suffolk trial area is one of four nationally and was promoted locally as the *Renewing the Alde Project*. Its aim was to implement the national objectives of the Habitat Restoration Project at a local level. The Suffolk Wildlife Trust was chosen to manage the project.

The trial area comprises 103 square kilometres of land that lies within the Suffolk Coast and Heaths Natural Area. It contains a wide variety of semi-natural habitats of high conservation value.

During the first year, an initial assessment of landowner attitudes was made, land use surveys were carried out and the vision was formulated. The vision identified priority species and habitats for restoration based on current national and local conservation concerns and set targets for the restoration of these habitats. It set preferred zones for the restoration of particular habitats based on local features, such as geology and landform and the distribution of existing habitats. Years two and three were used to implement the aims and objectives of the project.

Although the Project built on the knowledge and experience of other projects that were already active within the trial area it was unique in its approach. The following elements were provided:

- a holistic vision to increase biodiversity;
- a pro-active approach to owner/occupiers;
- a one-stop-shop for grant advice and help with form-filling;
- free nature conservation advice.

The success of the vision map approach is reflected in its proposed continuation in the Suffolk Coast and Heaths AONB.

The project achieved the following:

- a succinct summary of BAP and Natural Area targets for the trial area landscape through the vision map and report. This was shared by other conservation organisations and showed landowners what these targets might mean for their own holdings;
- good working relationships with landowners and partners, half of whom sought advice or initiated work;

- a project officer-centred focus for the delivery of BAP which brought in more than twice the cost of running the project in additional funding towards restoration and creation work;

- an increase in the proportion of the trial area supporting semi-natural habitat from 1881 ha (17%) to 2174 ha (20%), an increase in the mean parcel size of priority habitats from 6.7 ha to 7.2 ha, decrease in the number of parcels from 315 to 307 and a reduction in the mean inter-patch distance for individual priority habitats by about 17 m;

- 650 ha and 18 km of restoration and creation work in 137 projects, 45% as a direct result of the project officer, largely where it was identified as desirable in the vision, making significant contributions to the heathland, grazing marsh, field margin and hedgerow targets.

The project:

- confirmed that both public authorities and private landowners were equally important in delivering restoration/creation targets for blocks of habitat but that private farmers delivered the majority of restoration of linear features. Heathland work was predominately carried out by non-farming landowners with grazing marsh and linear features (hedges, ditches and field margins) by farmers;

- confirmed that restoration targets were easier to achieve than creation targets;

- identified Countryside Stewardship and ESA agreements as the most popular general funding mechanisms, and HLF for heathland restoration;

- identified the greatest local obstacles to achieve BAP nationally as: a poor fit with farm business, insufficient funds to cover both biodiversity and landscape objectives in some existing schemes, inadequate incentives in relation to potential farm income, complex application procedures, poor targeting;

- confirmed that although three years is sufficient to build relationships it is insufficient to deliver all of the targets in the vision report;

- initiated a 10 year programme of site-based ecological monitoring.

2. The key lessons derived from the trial

2.1 The vision

The vision summary map which identifies the preferred zones for the creation and restoration of the priority habitats (section 4.5 and Figure 8) was sent to all partners and landowners within the trial area. The map showed how individual holdings contributed to national nature conservation priorities and could be enhanced in the future. Numerical targets, based on the Biodiversity Action Plan and the Natural Area profile, were set which if delivered at a local level would deliver an appropriate proportion of the national BAP targets. Initial fears about upsetting landowners by highlighting particular areas for restoration were unfounded - no negative comments were received, indeed many landowners found the vision map particularly interesting. This map, and the pro-active approach of the project officer, was probably one of the main mechanisms by which landowners' perceptions of the nature conservation priorities for the trial area were changed. Prior to the start of the project about two-thirds of landowners had carried out restoration work on ponds, hedges and woodland. By the end of the trial there was a significant increase in the proportion of schemes to restore heathland, grazing marsh and cereal field margins. The map helped landowners understand how the decline in, for example, farmland birds which they had heard about might be reversed on their own holdings. Non-threatening language was very carefully chosen to communicate the principles of landscape-scale restoration.

The vision was also well received by partners as its inclusive and holistic nature provided a framework to which their work contributed. It was an especially useful reference for FWAG farm plans. The Coast and Heaths Project were enthusiastic about the holistic nature of the vision and its overall aims and objectives and intend to produce a similar vision for the entire AONB.

2.2 The most effective methods for stimulating restoration or creation schemes

The project officer took a pro-active approach actively engaging landowners in discussions about the contribution they might make to restoration in the trial area. As a result 45% of schemes (62 out of 137) involved the project officer directly. Within the trial area there were five other conservation initiatives operating whose project officers were involved in delivering the other 55% of restoration projects.

The majority of interest in habitat restoration arose from face-to-face meetings. A questionnaire carried out in 1996 was used to ascertain past and potential enthusiasm for habitat restoration amongst land owners. It was a useful first point of contact that enabled the most enthusiastic landowners to be identified and subsequently targeted.

Mail shots of either newsletters, leaflets or the vision summary were also used to publicise the Project but resulted in few requests for help or advice. To minimize unwanted information being sent to land owners, information was tailored towards individuals' requirements and interests as far as possible.

Overall the bulk of restoration/creation work addressed heathland/acid grassland and coastal grazing marsh conservation. These habitats were held by many different land owners and there are a wide variety of funding mechanisms available for their restoration (Tables 8 and 9). Although the financial incentives available do not compensate for the potential loss of income from farming these habitats, the provision of practical help and technical advice may help offset the impact of some of this possible loss.

Linear features were largely restored in the farm landscape but blocks of habitats were restored in areas where semi-natural habitats already existed. Countryside Stewardship and ESA agreements funded the greatest variety of restoration/creation schemes. Overall, Countryside Stewardship funded 25% of habitat blocks and 94% of linear features using 64% of the financial investment made in restoration; ESA payments contributed to 23% of work with 3% of funds (probably an underestimate), and the Heritage Lottery Fund through Tomorrow's Heathland Heritage contributed to 28% of work with 17% of funds. The Habitat Restoration Project itself contributed to 2% of work using 3% of funds. On this basis the ESA mechanism and funding rates appear to be the most financially effective means of achieving habitat restoration. The bulk of the work achieved through Countryside Stewardship was of linear features (mostly arable field margins and hedgerow restoration) which may deliver less wildlife benefit than creating or restoring blocks of habitat. The project identified several specific improvements to Countryside Stewardship and ESA mechanisms which would improve their delivery of wildlife gain (section 6.3.2).

Twenty-five private farmers delivered 38% of restored habitat blocks and 95% of linear features in 99 schemes with a mean parcel size of 5.8 ha and 345 m respectively. In contrast, nine non-farming landowners, nature conservation NGOs and public bodies delivered 62% of blocks of restoration work in 38 schemes with a mean parcel size on 10.7 ha. Although delivery of habitat restoration is easier for the non-farming landowners as this is often their business, or their public responsibility, private farmers carry out work in addition to running the farm business.

2.3 The added value of the project

Because the project was based in an area that is important for its wildlife and landscape, several organisations were already active within the trial area at the start of the Project. The majority of these organisations were aware of the importance of the priority habitats but no single organisation was focused on the whole area, had a pro-active approach or had the sole aim of increasing biodiversity. The project therefore had an important role to play as a central point of contact, providing a holistic view of the trial area, in addition to identifying and helping private landowners who had not received any previous conservation advice.

A comparison of the type of restoration projects that were being carried out at the start of the Project and those that were initiated during the course of the Project (Table 12) shows that the project has been successful in changing attitudes and has directed resources toward BAP priority species and habitats. Overall, the Project brought in twice its running costs in additional funding spent on delivering habitat restoration (Section 6.3). Although the bulk of this money was from existing schemes many landowners would not have applied to them without the pro-active approach of the project office. The project officer increased the proportion of applications for Countryside Stewardship which were successful.

Because the project officer was not attached to any particular funding mechanism, and the vision report brought all the potential sources of advice and money together, the project could act as a first-stop for landowners seeking advice.

2.4 The greatest obstacles to restoration and creation

Financial and operational constraints are both obstacles to restoration particularly for private landowners and in some cases so great, eg for saltmarsh creation and reedbed restoration, that only nature conservation NGOs are willing to undertake the work. Overall restoration of existing habitat is easier to achieve than creation of new habitat if this involves taking land out of agricultural production. Private landowners are willing to carry out restoration that fits in well with their business and for whom the total incentive (including non-financial factors) offset the costs. Non-financial obstacles include the degree of fit with the landowners business; the availability of machinery and technical knowledge of the habitat; understanding of, and sympathy with, the wildlife and landscape value of the habitat and its associated species.

The financial restrictions include under funding of current incentives; both levels and total budget, complicated application procedures, schemes which are too broad to take specific account of BAP priority species and habitats.

2.5 Implications for delivery of international (Habitats and Species Directive), national (BAP) and local (Natural Area Profile) objectives

The targets originally set by the Project were based on those in *Biodiversity: The UK Steering Group Report*. If those targets cannot be met at a local level, then it is probable that the same constraints will apply at a national level.

Current funding structures are sufficient to deliver some things, i.e. the restoration of heathland, grazing marshes, arable field margins and ancient and/or species-rich hedges. Other species and habitat targets may be more difficult to achieve nationally, i.e. the creation of heathland, grazing marshes and reedbeds, and this is where conservation organisations tend to target direct resources

The greatest obstacle to reversing the fragmentation of priority habitats on private land is landowners' unwillingness to convert land from agricultural production to semi-natural habitats as described above

If the Biodiversity Action Plan targets are to be delivered it may be appropriate to distinguish the contributions which different funding mechanisms can make: these might include the role of Countryside Stewardship and the ESA mechanism within the agricultural environment; the role of specialist schemes, eg the Habitats Scheme for saltmarsh; delivery by statutory bodies as part of their other duties, eg the Environment Agency for grazing marsh; and delivery by conservation bodies.

2.6 Implication of the Project time scale

The Habitat Restoration Project was initiated by English Nature in 1996 and continued for three years until the end of March 1999.

During the course of the trial, a good working relationship was established between landowners and partners. Good working relationships are not established quickly. Months or even years are needed to build up trust, so the continuity of the single point of contact provided by the Project Officer will be lost at the end of the trial.

The full impact of the Project may be difficult to assess fully because of the time lag between initiating and implementing habitat restoration. Although further work is currently planned, future restoration projects may not actually occur because there is no source of help and advice for grant applications in some parts of the trial area.

Whilst it is apparent that perceptions have been changed during the course of the trial, there is potentially more that could be done to reinforce the achievements in changing perceptions. There is the danger that restoration projects in the future might return to those that concentrate on restoring those habitats that are more widely perceived to be of greatest benefit to wildlife, ie tree planting and ponds, rather than BAP priority habitats.

3. Background to the Project

In 1996, English Nature initiated a specific project to investigate ways of reversing habitat fragmentation and degradation and creating an agricultural landscape that is more hospitable to wildlife, with the overall aim of exploring different approaches to increase the biodiversity in lowland England. The Project was also set up to assess the extent to which the objectives set out in the Habitats and Species Directive, the Biodiversity Action Plan and Natural Area Profiles could be met within 'trial areas' of lowland England.

Experience gained from the trial areas will allow conservation organisations to target the most effective means of reversing habitat deterioration and fragmentation using the current range of environmental land management schemes and to identify any constraints which may prevent this from being achieved.

Nationally, four trial areas have been set up, each approximately 100 square kilometres in extent. The trial areas are centred around the Alde estuary in Suffolk; around the Ouse valley near Milton Keynes; in the Blackmore Vale, Dorset and in the Sherwood area of Nottinghamshire (Figure 1).

The Suffolk trial area has been promoted locally as *Renewing the Alde* (Figure 2) and contains a wide variety of semi-natural habitats of high conservation value in addition to extensive areas of intensively managed farmland.

4. The Project locally

The Project:

- covers land around the Alde estuary on the Suffolk coast;
- has a wide variety of ecologically important habitats as well as extensive areas of arable farmland;
- aimed to reverse habitat fragmentation and degradation;
- produced an idealised vision that identified the best locations for the restoration and creation of priority habitats and set targets for these habitats;
- encouraged restoration of habitats using funds from a wide variety of schemes, including Countryside Stewardship and ESA;
- employed a Project Officer to stimulate appropriate restoration projects by landowners;
- used an established group of locally based organisations as a steering group.

4.1 Objectives

The Suffolk trial area aimed to implement the national objectives of the Habitat Restoration Project at a local level. The overall objective was ***to encourage the creation and restoration of locally characteristic habitats and to determine whether this could be achieved using the current range of environmental land management schemes.***

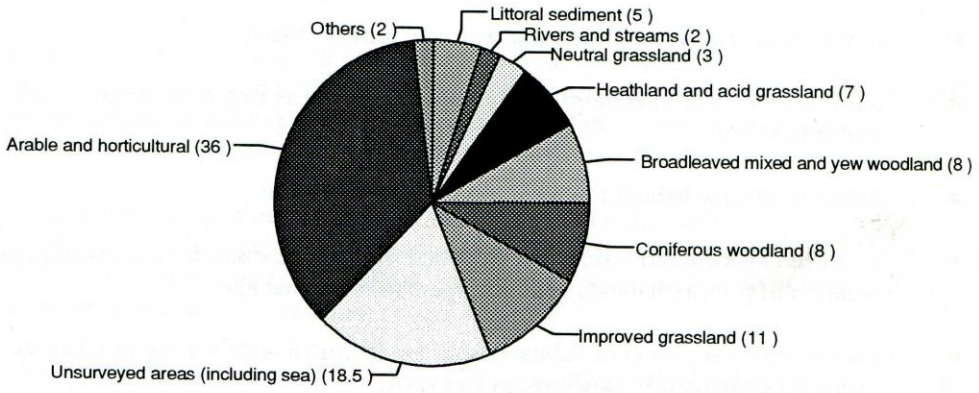
4.2 Location

The Suffolk trial area comprises approximately 103 square kilometres of land near the Suffolk coast, with roughly half the area lying north of the Alde estuary, and half south. It lies within the Suffolk Coast and Heaths Natural Area and contains a wide variety of semi-natural habitats including inter-tidal mudflats, saltmarsh and grazing marshes around the estuary. Heathland and acid grassland are scattered throughout, on the higher ground where the soil is acidic and freely draining. Woodland is also widespread with coniferous plantations dominating towards the south-west.

4.3 Main habitats

The extent of the main habitats is shown in Figures 3 and 4. The data is derived from a Phase 1 style survey (Nature Conservancy Council 1990) carried out in 1996 and subsequently converted to BAP broad and priority habitat types. Details of the areas in hectares and the percentages of all the habitats are shown in Appendix 1 and Figure 5.

Figure 5 - Habitats in the Alde trial area (%)



Others above include:

Inland rock	0.001%
Calcareous grassland	0.02%
Supra littoral rock	0.02%
Coastal sand dunes	0.08%
Standing open water	0.3%
Built up areas and gardens	0.4%
Supra-littoral sediment	0.4%
Fen, marsh and swamp	0.6%
No match between Phase 1 and BAP	0.02%

4.4 Main nature conservation features and designations

The diversity of habitats and their high conservation value is reflected in the large number of designated sites (Figure 6). The Alde estuary is a Special Protection Area; there are 15 Sites of Special Scientific Interest including North Warren RSPB reserve and the adjacent Thorpeness Meare and 22 County Wildlife Sites including South Warren and Tunstall Forest. In total statutory and non-statutory nature conservation sites cover 3173 ha (29%) of the total area. Roughly half the trial area lies within an Area of Outstanding Natural Beauty and the River Alde and its tributaries are included within the Suffolk River Valleys Environmentally Sensitive Area (Figure 7).

4.5 The vision

The vision for the trial area (Figure 8) (Williamson and Horton 1997) highlights the national and regional importance of the trial area for particular species and habitats. It identifies preferred zones for the creation and restoration of those habitats that have undergone the greatest reduction in overall extent and those that have been most severely fragmented. Examples are also given of those species that are most likely to benefit from the restoration or creation of these priority habitats.

The background to the derivation of the vision is explained in section 5.

4.6 Land ownership

There are 103 land holdings in the trial area, about 50% of which are in blocks of 2-50 ha, and about 20% each in blocks of 50-200 ha and more than 200ha. Most holdings are privately run from businesses although the Forestry Commission and RSPB are also significant landowners in the area (Williamson 1997).

4.7 The role of the Project Officer

The principal functions of the Project Officer were to initiate, co-ordinate and facilitate appropriate restoration projects using local funding options, identify constraints to habitat restoration and publicise the project locally. The Project Officer was able to provide landowners with free advice about the restoration and creation of habitats and provide help with grant applications.

Because the Project Officer only worked two days per week, many restoration projects were either managed jointly or passed on to other organisations. Experience gained during the management of the Project enabled the Project Officer to identify constraints to the restoration and creation of priority habitats.

4.8 Steering Group

The Steering Group for the Renewing the Alde Project comprised the established Coast and Heaths Conservation Group. This group had already been set up as a forum to discuss conservation and landscape issues within the Suffolk Coast and Heaths AONB, so it was logical to extend the scope of the group to become the steering group for the Project. It was decided that the Steering Group meetings should function as an opportunity to exchange ideas and experience rather than be a decision making body. The group met approximately every six months.

The membership of the group was made up of representatives from the following organisations: English Nature, Suffolk Wildlife Trust, FWAG, FRCA, Suffolk Coastal District Council, Suffolk County Council, Coast & Heaths Project, Environment Agency, RSPB, NFU, CLA, Suffolk Preservation Society.

5. The vision for the trial area and its implementation

The vision:

- identified the most appropriate habitats for restoration and the preferred locations;
- set targets;
- was summarised in a format that was well received by partners and landowners.

To enable the vision to be implemented:

- the most enthusiastic landowners were targeted initially;
- funding mechanisms were identified.

5.1 Background to derivation of vision

The purpose of the vision was:

- to select locally characteristic habitats that have suffered the greatest losses to their quality and extent;
- to identify the most appropriate locations for their restoration or creation;
- to set realistic targets for restoration;
- to highlight the species that may respond to habitat restoration.

This was achieved by:

- mapping the past and present distribution of semi-natural habitats and farmland;
- consulting *Biodiversity: The UK Steering Group Report* and *The Suffolk Coast and Heaths Natural Area Profile*, which identify those habitats that are under most threat nationally and locally;
- mapping those areas that lay below 5m above sea level;
- mapping the distribution of appropriate soil types.

The Biodiversity Action Plan and the Natural Area Profile identifies that the following habitats are the highest priority for restoration in the trial area:

- lowland heathland/acid grassland;
- coastal and floodplain grazing marsh;
- reedbed;
- estuarine habitats;
- ancient and/or species-rich hedgerows;
- cereal field margins;
- saline lagoons.

The vision map (Figure 8) shows the locations where restoration of these habitats would be of most benefit to wildlife. Although ancient and/or species-rich hedgerows and cereal field margins are priority habitats in the Biodiversity Action Plan, they are not considered key nature conservation features within The Suffolk Coast and Heaths Natural Area where there are also other more important semi-natural habitats Vegetated shingle, another BAP priority habitat, was not considered further as options for its creation within the trial area were limited.

The map showing preferred zones for restoration and the species that were most likely to benefit was included in a vision summary which was sent to all partners and landowners within the trial area. Initial fears about upsetting landowners by highlighting particular areas for the restoration of specific habitats were unfounded – no negative comments were received, indeed many landowners found the vision map particularly interesting.

The vision set quantitative targets based on BAP and Natural Area targets. The only exception was the target for the creation of heathland, which was set at 20% rather than the national BAP target of 10% since it was thought that the higher target was achievable and desirable in an area of national importance for its heathland.

Table 1. Summary of targets for restoration

Habitat	Trial Area target	BAP target	Natural Area objectives
Heathland/acid grassland	Increase area by 20%, manage existing	Increase area by 10%, manage existing	Link existing areas sympathetically, create new areas next to existing or to create links
Coastal and floodplain grazing marshes	10% to go into tier 2, 5% into tier 2a, increase area by 5%	Maintain existing, rehabilitate 33% by 2000, create an additional 8% by 2000	Ensure dykes are managed sympathetically, maintain established wet woodland, raise water levels and graze at an appropriate density
Reedbeds	Increase area by 20%, improve quality of all existing reedbeds	Increase area by 24%, maintain/improve existing	Maintain existing, restore neglected, create new areas
Estuarine habitats	Redress losses	Maintain and enhance existing, prevent further losses	Minimise damage to existing, create new areas to replace past and potential losses
Ancient and/or species-rich hedgerows	Improve quality, achieve favourable management of 25% of existing by 2002 and 50% by 2007	Halt net loss, achieve favourable management of 25% of existing by 2000 and 50% by 2005	Not a conservation priority
Cereal field margins	Improve quality of existing margins	Maintain, improve and restore 37.5% by 2010	Not a conservation priority

5.2 Farmers' attitude survey (1996)

5.2.1 Introduction

To establish a baseline of attitudes to restoration, a questionnaire was designed to find out whether landowners and land managers had created or improved any habitats in the past or intended to do so in the future, whether they had used environmental land management schemes to assist them, their levels of satisfaction with the schemes and whether improvements could be made to the schemes to make them more attractive. Seventy questionnaires were completed in the autumn of 1996, the majority during face-to-face interviews with landowners and land managers in the project area.

5.2.2 Main conclusions

The majority of land owners and land managers living and working in the countryside appreciate the rural landscape and the wildlife that it supports. Many feel that farming and wildlife should co-exist and that greater resources should be directed towards this aim.

66% of landowners questioned (46) had created or improved habitats for wildlife prior to the project starting. Woodland, hedges and ponds were the most frequently managed habitat.

A detailed analysis of the questionnaire is included in Williamson (1997).

5.3 Financial options for restoration

The following schemes were used to fund restoration projects within the trial area. The following are brief summaries of their scope. Greater detail is included in Appendix 2.

MAFF

- **Countryside Stewardship** – provides incentives for the traditional management of a wide variety of habitats, important landscape and historic features and increased public access.

- **Non-rotational and rotational set-aside** – arable area payments for land taken out of arable production.

- **Suffolk River Valleys Environmentally Sensitive Area** – primarily encourages the creation, retention and sympathetic management of grassland. Covers a wider range of habitats since 1998.

- **Habitat Scheme** – provides incentives for the creation of saltmarsh during managed retreat.

- **Farm Woodland Premium Scheme** – incentives for planting woodland on agricultural land.

Forestry Commission

- **Woodland Grant Scheme** - Capital payments are made for tree planting and the management of ecologically important woodland.

Suffolk County Council

- **Conservation Grants** - Capital payments for small projects not covered by other schemes.

English Nature

- **Wildlife Enhancement Scheme** - Revenue and capital payments for managing Sites of Special Scientific Interest and other important wildlife sites.

- **Habitat Restoration Project** – Capital payments for the restoration of priority habitats within the trial area not funded through other means.

Other mechanisms

The following were also used as options to assist in the implementation of the project:

- FWAG Landwise and Whole Farm Plans

- Heritage Lottery Funds through Tomorrow's Heathland Heritage;

- European Union LIFE funds;
- practical assistance from the Coast and Heaths Project and the Suffolk Wildlife Trusts' Sandlings Project;
- grants from the Alde/Ore Association;
- grants from English Nature's Species Recovery Programme;
- grant from Plantlife;
- Landowners' own funds.

6. Results of the trial and discussion

Results:

- The vision map provided a succinct summary of BAP and Natural Area targets for the trial area landscape which was well received and used by all landowners. It directed restoration/creation towards BAP priority habitats and species at key locations.
- A good working relationships with landowners and partners achieved 650 ha and 18 km of restoration/creation work in keeping with the restoration vision in 137 projects, 45% as a direct result of the project officer and the remainder jointly with other local projects or directly by landowners.
- Overall, there was an increase in the proportion of the trial area supporting semi-natural habitats from 1881 ha (17%) to 2174 ha (20%), an increase in mean parcel size from 6.7 ha to 7.2 ha, a decrease in the number of parcels from 315 to 307 and a reduction in mean inter-patch distance for individual priority habitats by about 17 m.
- The project confirmed that both public authorities and private landowners are equally important in delivering restoration/creation targets for blocks of habitat but that private landowners deliver the majority of linear features.
- The work identified the principle reasons (personal, business and financial) which both encourage and dissuade private and public landowners from taking part in habitat restoration in this area and the suitability of different funding mechanisms in achieving particular restoration/creation targets.
- The project officer-centred focus brought in more than twice the project's costs in additional funding, encouraged new landowners to contribute and increased the proportion of successful applications for existing agri-environment schemes.
- The project initiated a 10-year programme of site based and species monitoring.

6.1 Wildlife benefit achieved within the trial area

6.1.1 Overall landscape change

Table 2 summarises the impact of restoration work on the overall trial area landscape. Significant increases in area have been achieved for heathland, grazing marsh and saltmarsh and the quality of heathland, grazing marsh, hedges, and field margins for wildlife.

6.1.2 Habitats restored

The detail is shown in Appendices 3 to 6 and in Figure 9.

Overall, of the 137 restoration projects, 97.5 % of the habitat blocks (599 ha) and 21 % of the linear habitats (3794 m) were created in the most appropriate areas according to the vision map.

Table 2. Summary of the extent of wildlife habitats before and after the trial (based on targets in Table 1)

Before	Work	After
716ha of unmanaged or under-managed heathland/acid grassland	345ha (48%) of existing heathland put into optimal management. 100ha (14%) of new heathland created	816ha of heathland, 445ha of which under appropriate management. Overall 14% increase in area.
740ha of improved grassland around the river Alde and its tributaries. 327ha of optimally managed grazing marsh.	140ha (30%) of improved grassland converted to wet grazing marsh. 8ha of new grazing marsh created from arable.	475ha of wet grazing marsh. Overall 45% increase in area.
174,710m of hedges	4,948m of hedges sympathetically managed. 1072m of new hedges.	175,782m of hedges of which at least 4,948m under appropriate management. Overall 0.6% increase in length.
161ha of saltmarsh, eroding at 1% annually.	31ha of new saltmarsh created.	192 ha of saltmarsh. Overall 19% increase in area.
No arable field margins	11281m of arable field margins created	11281m of arable field margins
60ha of reedbed in the process of being restored.	6ha of reedbed restored.	60ha of reedbed, most of which is sympathetically managed.
35ha of open water, some of which is neglected ponds.	9 ponds restored (8ha total)	
846ha of broadleaved woodland	12ha of woodland restored, 2ha of new woodland. Plus two orchards (1ha) restored	848ha of broadleaved woodland
Two neglected sites for red-tipped cudweed	Both sites now managed	Red-tipped cudweed sites now appropriately managed
No sand pits managed for sand martins	One new cliff created for sand martins	One sand martin cliff

Heathland restoration (existing resource 716 ha)

- 345 ha of heathland is being sympathetically managed at 45 sites with a mean parcel size of 9 ha. 10 sites (8%) are more than 10ha with the majority (57%) less than 1ha (e.g. along woodland rides);
- restoration sites are centred on Tunstall Forest, Snape Warren and Aldringham, improving connections between existing blocks of heathland;
- all restoration/creation has occurred within areas shown as existing heathland on the vision map;
- 48% of the trial area target to manage the existing resource has been met.

Heathland creation

- 100 ha of heathland has been created in small parcels centred on Snape Warren.
- All creation has occurred within areas shown as desired heathland on vision map.
- 70% of the trial areas target to increase the area by 20% has been met (100 ha from a target of 145 ha).

Coastal and floodplain grazing marshes restoration (existing resource 327ha)

- 140 ha of grazing marsh has been restored from improved grassland in eight blocks with a mean parcel size of 17 ha.
- Most restoration (c105ha) has involved the conversion of improved grassland /raising water levels by farmers in ESA agreements, with 104ha in a single block (1 holding) adjacent to the Alde at High Street.
- All restoration has occurred within areas shown as desired or existing wetland on the vision map.
- The trial areas target, 10% into ESA tier 1 and 5% into tier 2a, has been met with at least 15% of grazing marsh in tier 1/tier 2a.

Coastal and floodplain grazing marshes creation

- *c*8 ha of grazing marsh have been created from farmland. Two sites on one holding are involved with a mean parcel size of *c*3.5 ha.
- The work has been funded through an ESA agreement and is linked to habitat enhancements funded by Countryside Stewardship.
- All creation has occurred within areas shown as existing or desired wetland on the vision map.

- The Trial Area target to increase the area by 5% has been achieved.

Reedbed restoration (existing resource 60 ha)

- 6 ha of reedbed have been restored. Two sites on two different holdings are involved with a mean parcel size of 3 ha.

- One site has been restored by a farmer and the other by an NGO (part of a nature reserve). Both sites are located adjacent to the estuary within existing wetlands and have been funded by ESA and HLF payments.

- All restoration has occurred within areas shown as existing or desired wetland on vision map.

- The Trial Area target to improve the quality of existing reedbeds has largely been met, although much of the work happened independently of the project. Remaining areas of reedbed are considered to be too degraded to be worth restoring.

Reedbed creation

- No new reedbeds have been created.

- The Trial Area target to increase the area of reedbeds by 20% has not been met.

Saltmarsh creation (existing resource 161ha)

- 31 ha of saltmarsh have been created on one site.

- The saltmarsh has been created by an NGO between the Alde and the coast adjacent to other saltmarsh.

- All creation has occurred within an area shown as suitable for saltmarsh creation on vision map.

- The Trial Area target to redress losses has been met. There has been a 5% increase in saltmarsh which balances out the loss of saltmarsh over the last five years.

Hedge management including ancient and/or species-rich (existing resource: 174,710m)

- 4948 m of ancient/species rich hedges are being restored and an additional 1072 m are being created using existing schemes/incentives.

- hedge restoration and the majority (77%) of new hedge planting has been by farmers funded by Countryside Stewardship and frequently associated with arable field margin creation. The two main locations for hedge restoration/creation are at Friston and east of Snape where the landscape has very few other areas of semi-natural habitat.

- Work has largely occurred within areas shown as existing or desired farmland habitats on the vision map.

- The Trial Area target to improve quality and achieve favourable management of 25% of existing hedges by 2002 and 50% by 2007 is unlikely to be met within the time frames specified. Only 3% of hedges are being restored and 1% of new hedges created (NB data is not available on hedge restoration/creation not covered by CS/ESA so the percentage being restored/created may be greater).

2m and 6m arable field margins creation [existing resource: nil]

- 10,840m of 2m and 441m of 6m field margins have been created. 24 sites are involved on five holdings.

- All the work has been carried out by farmers with Countryside Stewardship as the sole source of funding. Field margins are strongly associated with hedge restoration/ creation and are concentrated in the same localities.

- Work has largely occurred within areas shown as existing or desired farmland habitats on the vision map.

- The Trial Area target to improve quality of existing margins has been met as no arable field margins were created before the trial.

Other farmland habitats including woodlands, orchards and ponds

- 12 ha of woodland [existing resource: 846 ha] and nine ponds [existing resource: 35 ha] have either been created or restored. One sand martin cliff has been created.

6.1.4 Fragmentation changes

The majority of work (90%) related to two of the priority habitats; lowland heath/acid grassland and coastal and floodplain grazing marsh. Table 3 shows the impact restoration work has had on the degree of habitat fragmentation in the trial area.

At the start of the project, 17% of the trial area supported priority semi-natural habitats. As a result of the habitat creation work undertaken, priority semi-natural habitat will occupy 20% of the trial area once the habitats develop. Overall there has been a decrease in the number of parcels supporting semi-natural habitat from 315 to 307 and their mean patch size has increased from 6.7 ha to 7.2 ha. This pattern is in the main due to the creation/restoration of heathland/acid grassland in areas which extend and/or link existing parcels. For heathland/acid grassland the proportion of the trial area covered by the habitat has increased from 8% to 9% but the total number of habitat parcels declined from 159 with a mean area of 4 ha to 125 with a mean area of 6.3 ha. Heathland creation was in medium sized blocks (45 sites with a mean area of 9 ha) and was largely located adjacent to existing heathland. The proportion of land in the middle size classes (1-3 ha, 3-5 ha and 5-10 ha) declined but the proportion of land in the largest class (greater than 10 ha) and the smallest class (less than 1 ha) increased from 6% to 8% and 52% to 57% respectively, reflecting the location of the new habitat. Overall this reduced the mean inter-patch distance for heathland/acid grassland by 0.014 km.

Table 3. Changes in fragmentation indices as a result of the project

Fragmentation measure	At start of project	After restoration work
Priority habitat as % of trial area	11881 ha (17%)	2174 ha (20%)
Number of individual priority habitat parcels		
• overall	315	307
• saltmarsh	33	32
• heathland/acid grassland	159	125
• grazing marsh	41	43
Mean patch size		
• overall	6.7 ha	7.2 ha
• saltmarsh	4.8 ha	5 ha
• heathland/acid grassland	4 ha	6.3 ha
• grazing marsh	8 ha	10 ha
Mean inter-patch distance		
• overall		
• saltmarsh	0.353 km	0.329 km
• heathland/acid grassland	0.412 km	0.398 km
• grazing marsh	0.584 km	0.569 km
Proportion of parcels in the following size classes: 0-1 ha, 1-3 ha, 3-5 ha, 5-10 ha, 10+ ha		
• overall	47%:24%:10%:8%:10%	48%:23%:9%:12%
• saltmarsh	27%:36%:15%:6%:15%	27%:33%:11%:4%:24%
• heathland/acid grassland	52%:23%:8%:9%:6%	57%:20%:6%:8%:8%
• grazing marsh	34%:29%:10%:7%:19%	32%:25%:14%:7%:20%

In contrast, the creation of grazing marsh has increased the proportion of the trial area supporting the habitat from 3% to 5% but it took place in a small number of larger blocks (eight sites with a mean area of 17 ha). The number of parcels increased from 41 with a mean area of 8 ha to 44 with a mean area of 10 ha but there was little change in the proportion in the different size classes. This reduced the mean inter-patch distance by 0.015 km.

Overall the size of individual habitat parcels has increased but the mean inter-parcel distance has only declined slightly. For those species for which the existing parcels are large enough habitat quality will improve, assuming suitable management of the new habitat. However for those species which require significantly larger parcels of habitat the degree of increased connectivity achieved is unlikely to be significant. The ecological development of habitat quality is being monitored at the site level (Mitchley *et al* 1998).

Restoration of linear features has largely taken place on the farm-scape in the north-west of the trial area by individual farmers with financial assistance from Countryside Stewardship. Overall, these habitat lengths are relatively short (total length 18km, 54 projects of which 54% <0.25km, 26% 0.25-0.5km, 19% 0.5-1km, 2%>1km). These features are relatively easy to achieve within the farmed landscape as they fit well with the farm business and are relatively well funded. The Biodiversity Action Plan anticipates that hedgerow restoration will improve habitat quality for formerly common farmland species including pipistrelle bats, brown hares, yellow hammers, skylarks and other farmland birds. A detailed programme of species monitoring at the landscape scale within the trial area will examine whether this is the case.

6.2 Achieving better working relationships with land owners and partners

6.2.1 Landowners involvement

Within the trial area slightly less than half (43%) of private farmers, slightly more than half (53%) of non-farmers* and the majority of public bodies or NGOs have carried out restoration projects (Table 4).

Table 4. Ownership type in relation to advice sought or restoration projects initiated during the course of the Project

Ownership type	Advice sought or restoration projects initiated	No advice sought, no restoration projects initiated	Total
Farmer	20 (19%)	27 (26%)	47 (46%)
Non-farmer*	26 (25%)	23 (22%)	49 (48%)
Public body/NGO	6 (6%)	1 (1%)	7 (7%)
Totals	52 (50%)	51 (50%)	103

*Private landowners whose holdings are not primarily run as farm businesses.

Table 5. Work carried out by private farming landowners compared to other landowners

Work	Private farmer	Other landowner
Woodland restoration	8 ha (67%)	4 ha (33%)
Woodland creation	3 ha (100%)	0
Dry grass restoration	0.4 ha (100%)	0
Dry grass creation	0.7 ha (100%)	0
Restoration of grazing marsh from improved grassland	139 ha (100%)	1 ha (0%)
Grazing marsh creation	8ha (100%)	0
Heathland restoration	49ha (14%)	292 ha (86%)
Heathland creation	35 ha (35%)	65 ha (65%)
Reedbed restoration	5 ha (83%)	1 ha (17%)
Saltmarsh creation	0 ha	31 ha (100%)
Arable field margins	11,280 m (100%)	0
Hedgerow restoration	4,916 m (100%)	0
Hedgerow creation	829 m (77%)	243 m (23%)
Red-tipped cudweed	0.1 ha (10%)	1 ha (90%)
Sand martin cliff	10 x 4 m (100%)	0
Orchards	0.3 ha (100%)	0
Pond restoration	1 ha (13%)	7 ha (87%)
Stream restoration		873 m
Total	249 ha and 17 km	402 ha and 1 km

Overall, half the landowners in the trial area have contributed land for habitat restoration. The data obtained in the 1996 questionnaire revealed that 66% of the sample of landowners interviewed had already carried out environmental improvements before the start of the trial (Williamson 1997) thus indicating a high level of willingness to take part in restoration if the appropriate practical and personal help is available.

Overall, nine public authorities, nature conservation NGOs and private landowners whose main business was not farming, carried out about 62% by area of the blocks of restoration work undertaken in 34 schemes with a mean parcel size of 11ha while 25 private farmers carried out the remaining 38% in 49 schemes with a mean parcel area of 6ha. However, private farmers carried out the vast majority of the work on linear features by length. This pattern is broken down further by habitat in Tables 5 and 6.

Private farmers are most likely to undertake restoration of existing habitats that fit in well with agricultural requirements, such as work on grazing marshes, hedges, ponds and field margins. In all these examples the landowners themselves were happy to manage the restoration work. In the case of heathland, restoration work requires novel skills and is largely being carried out by the Suffolk Wildlife Trust's Sandlings Project and other NGOs with the consent of the landowners (Table 6). The size of the land holding has little or no bearing on the willingness of private landowners to manage their land for the benefit of wildlife. The possible reasons for the creation or otherwise of particular habitats is shown in Table 7.

Table 6. The relationship between ownership type and restoration projects

Habitat	Farmer	Non farmer	NGO	Farmer/NGO	Non-farmer/ NGO/C&H	FE/NGO
Woodland creation	3 ha					
Woodland restoration	8 ha	2 ha			2 ha	
Dry grass restoration	0.4 ha					
Dry grass creation	0.7 ha					
Grazing marsh restoration	139 ha	1 ha				
Grazing marsh creation	8 ha					
Heathland restoration	13 ha	136 ha	55 ha	36 ha	77 ha	24 ha
Heathland creation	26 ha	16 ha	12 ha	9 ha	13 ha	28 ha
Reedbed restoration	5 ha		1 ha			
Saltmarsh creation			31 ha			
Arable field margin creation	11,280 m					
Hedgerow creation	829 m	243 m				
Hedgerow restoration	4,916 m					
Red-tipped cudweed				0.1 ha	1 ha	
Sand martin cliff	10 x 4 m					
Orchards	0.3 ha					
Ponds	1 ha	7 ha	0.1 ha			
Stream restoration			873 m			

Table 7. Reasons for restoration of particular habitats

Habitat	Incentive?	Disincentive?
Ancient and/or species-rich hedges	Familiarity by farmers with management, integral part of agricultural landscape, have benefits for agriculture and game, protected under Hedgerow Protection Bill.	Incentives do not fully cover costs, large field sizes required with modern farm machinery.
Arable field margins	Low productivity of field edges, game, incentives set at adequate levels.	Incentives not set at levels to compensate for loss of income from some arable crops.
Grazing marshes	Management fits in well with agricultural needs, incentives set at reasonable levels.	Depressed market for beef.
Farmland habitats	Familiarity by farmers with management, integral part of agricultural landscape, have benefits for agriculture and game.	Retention of non-farmed areas reduces profitability of farm business.
Heathland	Good level of local support for land owners by Sandlings Project, areas are unintentionally created under non-rotational set-aside.	Specialist habitat with low commercial productivity.
Reedbeds		Specialist habitat with low commercial productivity. Levels of incentives are too low.
Saltmarsh	Incentives set at adequate levels	Irreversible

6.2.2 Sharing the vision

The vision was an extremely useful tool as:

- it provided a holistic overview of the trial area;
- it gave a concise summary of the overall aims and objectives of the Project;
- it was easy to understand by land owners and partners alike without compromising the integrity of the objectives of the Project;
- it provided a starting point for ideas about restoration projects
- it provided a framework enabling restoration projects to be prioritised, facilitating the cost effective use of Project Officer time;
- it provided a model that could be adopted by other projects in the future.

A pro-active approach by the Project Officer was found to be the most effective means of communicating the aims and objectives of the vision and stimulating interest in habitat restoration to landowners.

Leaflets, newsletters, vision and habitat creation fact sheets were used to communicate the aims and objectives of the Project to landowners and to a wider audience via articles in the local press and on local radio.

Although time-consuming, face-to-face meetings were found to be the most productive means of stimulating interest in the Project. They also enabled a trusting relationship to be built up

and provided landowners with a single point of contact for advice on habitat restoration and grants.

6.2.3 The value of the partnership approach

The Renewing the Alde Project established a close working relationship with a number of key organisations already established within the trial area. These were the Suffolk Wildlife Trust's Sandlings Project, Suffolk County Council's Coast and Heaths Project, the Suffolk Farming and Wildlife Advisory Service (FWAG), the Farming and Rural Conservation Agency (FRCA) and the Royal Society for the Protection of Birds (RSPB).

There were several functions that were unique to the Renewing the Alde Project and others that were carried out to a lesser or greater extent by other organisations active in the trial area.

The unique features of the Project were:

- a pro-active approach throughout the trial area;
- providing a holistic vision of the trial area;
- having the sole aim of increasing biodiversity;
- free conservation advice throughout the trial area for all habitats.

The following were provided by other organisations:

- free conservation advice and practical help by the Coast and Heaths Project within the AONB and by SWT's Sandlings Project for heathland management and creation;
- conservation advice by FWAG for farmers who are members;
- conservation advice by FRCA for participants of ESA scheme.

The Suffolk Wildlife Trust's Sandlings Project was set up to provide practical support, expertise and advice on the management of heathland throughout the area of Sandlings Heathland in coastal Suffolk. The Renewing the Alde Project involved the Sandlings Project whenever landowners expressed an interest in either restoring or creating heathland. This high level of support for owners has been especially valuable and is reflected in the high proportion (48%) of existing heathland that is under sympathetic management.

The Suffolk Coast and Heaths Project provides funding, practical support and free advice for landowners within the Suffolk Coast and Heaths Area of Outstanding Natural Beauty which extends over the eastern half of the trial area. Their remit includes the management of all aspects of the countryside, including landscape, amenity and conservation. They were highly supportive of the aims and objectives of the Renewing the Alde Project and contributed labour and expertise to several initiatives within the trial area that lie within the AONB. They intend to adopt the vision map approach of the Habitat Restoration Project throughout the AONB.

Suffolk FWAG were generally supportive providing advice and helping promote the Project. They produced five farm plans during the course of the project which used the vision map and were partially or wholly funded by the Habitat Restoration Project. Because they receive funding directly from farmers, their approach is largely reactive rather than pro-active with their advice being tailored towards suggestions by farmers. They provide free advice on their first visit to farmers but do not usually provide advice to non-farmers.

Both the ESA and Countryside Stewardship Officers have been highly supportive of the Project, providing help and advice on numerous occasions. A farm walk was held jointly with FRCA in the spring of 1998. They are largely reactive, responding to requests by potential or existing agreement holders.

The Royal Society for the Protection of Birds has provided a similar high level of support and advice. The Reserves Manager of North Warren RSPB reserve has greatly assisted the Renewing the Alde Project on several occasions by allowing the use of North Warren as an example of how heathland and grazing marshes should be restored and maintained. A joint RSPB/ Habitat Restoration Project/ FWAG farm walk was held at North Warren that was targeted at owners of grazing marshes.

Other partners have been supportive of the aims of the Project but their involvement has not been as great, amounting to occasional help and advice.

6.2.4 The landowners' view of the vision

A follow up questionnaire was used by the Renewing the Alde Project in the autumn of 1998 to assess the impact of the project upon landowners' attitudes and whether it had stimulated appropriate restoration projects. The impact of publicity material was also assessed.

Due to time constraints, only 31 out of 103 landowners in the project area were interviewed. The majority of those selected for interview were those that had shown most enthusiasm for the project, since these would be able to supply the project with the most valuable information Full results are included in Appendix 10.

Results compared with the 1996 questionnaire

Because of the small sample size, a direct comparison could not be made between the 1996 and 1998 surveys. However, there were a number of general conclusions that could be derived by comparing both surveys.

The 1996 survey found that the most frequently restored habitats were woodland, hedges and ponds. The proportions changed by the 1998 survey with heathland and woodland being the most frequently restored habitats, then hedges, ponds and wet grassland. This may reflect the extensive local publicity and funding opportunities for heathland. Another notable difference was that in 1996, no arable field margins were being managed, whereas by 1998, the creation of arable field margin was the sixth most popular option.

Replies to the 1998 questionnaire indicated that people were aware of the importance of Biodiversity Action Plan priority habitats but this was not reflected in the type of habitats that landowners were actually intending to restore. This would seem to indicate that it is

agricultural and economic constraints that are preventing the restoration of priority habitats rather than perceptual constraints.

The vision summary was well received by landowners, with no negative comments being received. Comments from landowners included "it was particularly interesting, the visual approach worked well and it was focused". This positive response was contrary to initial concerns that the vision summary would be contentious and threatening.

6.2.5 Section summary

During the course of the Project, it was found that the majority of public bodies or non-governmental conservation organisations were carrying out appropriate habitat restoration. In the case of private land owners, more non-farmers than farmers became involved in managing their land for the benefit of wildlife. Land holding size had no bearing on the enthusiasm of landowners. There was also no pattern to the timing of involvement when comparing different landowner categories.

The vision summary was well received by landowners and partners alike and was an extremely useful tool for communicating the overall aims and objectives of the Project.

Regular contact by post was made with all landowners within the Project area but by far the most effective means of stimulating interest in habitat restoration was via face-to-face meetings.

The Project was well supported by partners, with the closest working relationships being established with the Suffolk Wildlife Trust's Sandlings Project, Suffolk County Council's Coast and Heaths Project, Suffolk FWAG, FRCA and the RSPB. Other partners were less actively involved but supported the overall aims and objectives of the Project.

Overall, the questionnaires established that:

- The type of habitats that landowners would like to restore changed during the course of the project, with Biodiversity Action Plan priorities becoming more popular.
- Agricultural and economic constraints are preventing the restoration of priority habitats rather than perceptual constraints.
- Over half (52%) of the people interviewed said that they had been helped by the Project and more than a third (35%) would not have carried out the work without the help of the Project.
- Overall 38% of work by area and 95% by length was carried out by private farmers.
- Private farmers carried smaller blocks of habitat (6ha compared to 11ha) but longer lengths (345m compared to 219m).

6.3 Funding for habitat restoration/creation

6.3.1 How habitat restoration/creation is funded

Restoration/creation projects were funded using a wide variety of incentives (Tables 8 and 9). The most significant of these were Countryside Stewardship, the Habitats Scheme and Heritage Lottery Fund. The financial contribution of ESA is under-represented as some agreements on which final decisions had not been made were not included in the evaluation. Few projects were funded wholly by incentive schemes so additional resources were provided by funds or labour from landowners. These factors, plus the variations in start time of the projects made comparison of costs difficult, but there were some general trends that could be ascertained.

Overall the habitats upon which the largest sums were spent were heathland, saltmarsh and hedgerow restoration.

The Countryside Stewardship Scheme supported the greatest variety of restoration work and also provided the greatest amount of overall funding for restoration schemes involving BAP priority habitats (*c*30%) including lowland dry grassland, heathland, arable field margins and the restoration of ancient and/or species-rich hedges. A large proportion of this work was for restoration of linear features.

The ESA scheme also supported several different types of restoration work, but its scope is not as broad as Countryside Stewardship. BAP priority habitats restored using this scheme included grazing marshes, heathland and ancient/species-rich hedges.

Other sources of funding were targeted at specific habitats.

Costs vary greatly between the restoration of different habitats and between different schemes making cross-habitat comparisons of £s spent/ha restored difficult. In the case of heathland restoration, grants from the Countryside Stewardship Scheme and the Heritage Lottery Fund are set at similar levels (£93/ha and £99/ha respectively), whereas the ESA scheme provides much higher levels of incentives (£249/ha). In the case of hedge creation, incentives vary from £2/m (Countryside Stewardship) to £4/m (Suffolk River Valleys ESA scheme).

6.3.2 The funding mechanisms and their suitability for funding restoration projects within the trial area

The Countryside Stewardship Scheme

The scheme is a potential source of funding for the restoration of all priority habitats included in the vision. Because funds are limited, acceptance into the scheme is discretionary. Applications are assessed using a scoring system which takes into account the variety of work the applicant is willing to undertake and whether the land lies in an area that is important for its landscape or wildlife habitats (targets). An application is most likely to succeed if it incorporates several different types of work, lies within a target area and includes creating or managing a target habitat. Targets are set in consultation with other conservation organisations that work in the area. Generally they work well with the limited resources being used to greatest effect to fulfil the schemes objectives.

Table 8. Summary of the sources of funding for restoration work up to March 1999 (by area)

Habitat	CS	ESA	WGS	HRP	HRP/ C&H	Plantlife/ Species Recovery	EU Life/ Habitat Scheme	HLF	HLF/ESA	C&H	Own Funds	EA
Woodland creation			3 ha									
Woodland restoration			10 ha							2 ha		
Dry grass restoration	0.3 ha											
Dry grass creation	0.7 ha											
Grazing marsh restoration/creation		140 ha		1 ha					2 ha	3 ha		
Heathland restoration	125 ha	3 ha		8 ha	4 ha			136 ha			6 ha	
Heathland creation	38 ha	5 ha		5 ha	1 ha			49 ha			5 ha	
Reedbed restoration									1 ha			5 ha
Saltmarsh creation							31 ha					
Arable field margin creation	11280 m											
Hedgerow restoration	4916 m											
Hedgerow creation	829 m	243 m										
Red-tipped cudweed						1.1 ha						
Sand martin cliff				10 x 4 m								
Orchards	0.3 ha											
Ponds	0.3 ha	0.5 ha									7 ha	*
Stream restoration									873 m			

Table 9. Summary of the sources of funding for restoration work up to March 1999 (£)

Habitat	CS	ESA	WGS	HRP	HRP/ C&H	Plantlife/ Species Recovery	EU Life/ Habitat Scheme	HLF	HLF/ESA	C&H	Own Funds	EA
Woodland creation												
Woodland restoration			7929									
Dry grass restoration	93									222		
Dry grass creation	773											
Grazing marsh restoration/ creation		apply 1999		1323					*	Practical help		
Heathland restoration	14575	2165		1000	2000			18112			*	
Heathland creation												
Reedbed restoration									1700			*
Saltmarsh creation							32133					
Arable field margin creation	35607											
Hedgerow restoration	9833											
Hedgerow creation	1658	1021										
Red-tipped cudweed						455						
Sand martin cliff				1095								
Orchards	350											
Ponds	2605	*									7ha	*
Stream restoration									3003 + extra in yr 2001			

There are several factors that are limiting the use of the Countryside Stewardship Scheme to meet Biodiversity Action Plan objectives and therefore the objectives of the Habitat Restoration Project. These factors are:

- The scoring system is not weighted in favour of BAP priority species and habitats.

  Within the scoring system, points are allocated for improving public access, the landscape, wildlife and any historically important features. Because the aims of the scheme are broad, applications that offer enhancements to wildlife without offering any historic, access or landscape improvements will score low and will not receive funding, hence opportunities to reverse fragmentation of key habitats may be lost.

- Under funding for Countryside Stewardship as a whole

  This has two separate impacts. Under-funding and tight competition results in applications that offer potential biodiversity gains being turned down, with the consequence that the work is not carried out or is carried out in an unregulated manner, which may not result in biodiversity gains. In addition low levels of payment for some restoration/creation work may not be attractive to landowners, restricting their willingness to take part. A substantial increase in funding would enable rates for managing and creating priority BAP habitats to be increased, more schemes to be funded, the scheme to have greater publicity and an increased level of support to be provided. All of the above should make the scheme more attractive to applicants, increase the quality of restoration projects and produce greater biodiversity gains.

- Additions to schemes are often rejected

  If applicants decide to apply for additional revenue items to their original scheme after it has started; the addition is often rejected because the items included in the original application are not used when calculating the score for the additional works. The new items will be judged solely on their own merits, and dealt with as if they were a new application. Opportunities for the reversal of habitat fragmentation may be lost.

- Applications for arable field margins within the Suffolk River Valleys Environmentally Sensitive Area are usually unsuccessful.

  The reasons are two-fold. Firstly, all land that lies within the Suffolk River Valleys Environmentally Sensitive Area is not a target area for arable field margins so applications will not score as high as those that do lie within target areas. Secondly, as most potential environmental improvements are included within the prescriptions for the ESA scheme, applicants for Countryside Stewardship are precluded from receiving funding for anything that is already itemised in the ESA scheme, which in practice is everything except arable field margins. An application solely for arable field margins would score low and would probably be unsuccessful. Unless this problem is addressed, the potential for the management and creation of arable field margins within the ESA area is very limited and BAP targets for farmland birds and arable weeds there may not be met.

- There are annual variations in the quality of applications being approved.

  All applications are assessed annually with variable numbers of applications of variable quality being received from year to year. This has led to inconsistencies in the quality of applications being approved and may lead to confusion amongst applicants as to what constitutes a successful application.

- The application forms are complicated.

  Many landowners are put off by the complexity of the application forms and need help when applying for the scheme. A simplified form may encourage more landowners to apply for the scheme.

The Suffolk River Valleys Environmentally Sensitive Areas Scheme

The Suffolk River Valleys Environmentally Sensitive Area covers 4,515ha (44%) of the trial area. Since July 1996, new schemes or additions to existing schemes have been initiated in 376 ha (8%) of the ESA area compared with 271ha (5%) of land outside the ESA area. Within the ESA area 7,760m of linear habitats have been restored (43% of total restored) compared to 10,382m (57% of total restored) outside the ESA area.

At the start of the trial, there were more ESA agreements than Countryside Stewardship, and this continues to be the case (Table 10).

Table 10. Numbers of ESA and Countryside Stewardship agreements before and after the Project

Scheme	No. of agreements prior to 1996 (% of total no. of owners)	No. of new agreements or additions since 1996	No. of proposed new agreements or additions in 1999
SRV ESA	41 (38%)	12	7
Countryside Stewardship	13 (12%)	8	5

The Environmentally Sensitive Areas Scheme was introduced by MAFF in 1987 to safeguard and enhance areas of countryside that are important for their wildlife, landscape or historical value. The scheme is voluntary and incentives are based on the benefits achieved by a variety of management options, with the highest payments available for greatest environmental benefits. Agreements last for ten years with a five-year break clause.

The majority of landowners within the ESA participate in the scheme. The popularity of the scheme is probably due to the high level of support and advice given by the Project Officer, its flexibility and being locally centered.

The implications for the delivery of BAP targets are discussed below:

- Arable field margins are excluded from the scheme

The exclusion of arable field margins from the ESA scheme has the effect of precluding landowners within the ESA area from obtaining funding for this option. The only alternative

source of funding for arable field margins is from the Countryside Stewardship Scheme but because of the way that applications are assessed, they are highly unlikely to succeed.

- The levels of incentives for the creation and management of reedbeds are not set at adequate levels

The creation and management costs of reedbeds can be very high, and once established or restored, a reedbed can have little or no commercial value. Therefore the levels of incentives need to reflect these costs. Currently, a capital grant of 50% is available to create reedbeds and £100/ha/yr is available for management. The percentage of the capital grant and the management grant both need to be set at much higher levels to encourage land owners to create and manage reedbeds.

The Heritage Lottery Fund

There are two key constraints to using the Heritage Lottery Fund for restoration projects:

- The funds are not currently available to private landowners unless they agree to lease their land to a recognised conservation organisation.
- Grants cover only a proportion of actual costs and so matching funding must be found from other sources.

The Habitat Restoration Project Fund

The additional funds provided by the Habitat Restoration Project were used for:

- restoration projects that were outside the scope of the current range of schemes;
- supporting landowners who were unable or unwilling to become involved in an existing scheme. In practice this developed to fund the restoration of existing BAP priority habitats (three heathland and one herb-rich wet grassland);
- the creation a cliff for breeding sand martins (BAP long list species).

General recommendations for improvements to environmental land management schemes

- simplify the application procedures;
- have a single scheme to cover all habitats;
- significantly increase the levels of funding to enable greater numbers of landowners to participate;
- increase payment levels to make schemes more attractive;
- give more weight to increasing biodiversity;
- take account of locally important species and habitats.

6.3.3 Value of Project Officer

The running costs of the Project were £54,000 for the entire trial period. During this time, about £108,000 worth of restoration work was carried out within the trial area excluding landowners own funds and time. This amount does not fully reflect the impact made by the Project Officer, which may be difficult to assess until several years have elapsed after the end of the project because of the time delay between initial enthusiasm and action.

The value in terms of wildlife benefit may also be difficult to assess accurately. Sympathetic management carried out as a result of advice given by the project officer may not incur a cost (e.g. the retention of dead wood) or landowners may finance restoration projects from their own funds.

The figures in Table 11 include all known restoration projects that were initiated between July 1996 and December 1998. The Project Officer was either wholly or partly involved in the initiation of over half of all the restoration projects carried out within the trial area.

Although a proportion of Countryside Stewardship and ESA agreements might have been agreed without the assistance of the project officer, it is certain that the presence of the project officer has increased the number and quality of applications and brought in twice the cost of running the project in funds towards restoration and creation work.

Table 11. Numbers of restoration projects wholly, partially or not initiated by the Project

Degree of project involvement	Numbers of restoration projects
Wholly initiated by project	62 (45%)
Partial involvement	11 (8%)
No involvement	64 (47%)
Total no. of restoration projects	137 (100%)

6.3.4 Value of good advice

There were several important functions that were carried out by the Renewing the Alde Project including:

- having a pro-active approach to owner/occupiers;
- providing a holistic vision of which habitats should be restored with preferred locations;
- having the sole aim of increasing biodiversity;
- providing a one-stop-shop for grant advice;
- providing free conservation advice;
- providing help with form-filling for grant applications.

Advice provided by the Project Officer or the FWAG advisor has resulted in better quality applications for incentives and has led to improvements in the quality of restoration projects initiated since 1996. The proportion of successful applications for Countryside Stewardship has been greater within the project area compared to outside. Ten landowners applied for Countryside Stewardship in 1996 and 1997, of these, eight were successful. This 80% success rate compares favourably with the national success rate of 44% in 1996 and 54% in 1997. Participation in a scheme ensures continuous, favourable land management over a ten-year period.

The proportions of different habitats restored by individual land owners changed during the trial, with a greater number of land owners restoring heathland and arable field margins in 1998 than in 1996 and fewer land owners restoring traditional farmland habitats (woodland, hedges and ponds) (Table 12). This change in emphasis towards BAP priority habitats implies that the advice provided by the Project was successful in changing attitudes and has directed resources towards locally important species and habitats.

Table 12. Numbers of landowners involved in habitat restoration before and after the Project

Habitat restored	No. of land owners in 1996	No. of additional land owners in 1998	Totals
Woodland	23	6	29
Hedges	23	4	27
Ponds	21	6	27
Wet grassland	9	4	13
Heathland	9	17	26
Arable field margins	0	5	5

6.3.5 Value of one-stop shop for grant and site management advice

At the start of the project, 26% of landowners said that more help and advice would attract them to environmental land management schemes (Williamson 1997). Of these, 64% have initiated restoration projects as a result of the additional help and advice provided by the Project. Therefore for this specific group, providing additional advice led directly to the restoration of BAP priority habitats.

It was apparent during the course of the project that landowners valued advice about grants and site management. This was confirmed by results from the 1998 questionnaire, in which 68% of owners said that they had found verbal advice useful and 45% had found the one-stop-shop for grant advice a useful element of the Project.

6.3.6 Role of the farm economy

In the 1996 questionnaire, 60% of landowners said that increased financial incentives would attract them to environmental land management schemes (Williamson, 1997). Whilst incentives available under environmental land management schemes have not changed significantly since 1996, farm incomes have plummeted with the result that the differences between potential income from agriculture and incentives from schemes have been reduced.

This has resulted in an increase in the interest shown in environmental land management schemes. This implies that in some circumstances, incentive levels need to be set at levels that are similar to potential agricultural incomes to encourage a consistent level of uptake of the schemes by farmers, particularly in the case of critical habitats or at key sites.

6.3.7 Roll on from previous projects

The Suffolk Wildlife Trust's Sandlings Project and the Suffolk Coast and Heaths Project were working in the trial area before the start of the Renewing the Alde Project. The Suffolk Wildlife Trust's County Wildlife Site Officer had also provided free advice to owners of County Wildlife Sites. The working knowledge of the trial area by the other projects was of great value during the trial period but was especially valuable at the outset, when information about land ownership was provided. The Renewing the Alde Project worked in partnership with these organisations and built upon the work that had been carried out before the start of the trial.

The Suffolk Wildlife Trust's Sandlings Project was consulted whenever landowners expressed an interest in either restoring or creating heathland. The Coast and Heaths Project has provided practical support for the restoration of two herb-rich wet meadows, the restoration of a disused railway line, hedge planting supported by a Countryside Stewardship grant and providing deer protection for a recently established woodland.

6.3.8 Section summary

Restoration projects were funded using a wide variety of incentives including:

- personal funds;
- Coast and Heaths Project grants;
- Woodland Grant Scheme;
- Countryside Stewardship;
- Suffolk River Valleys Environmentally Sensitive Areas Scheme;
- Heritage Lottery Fund.

Of the two principal schemes, ESA is more popular with landowners than the Countryside Stewardship scheme yet it has contributed significantly less financially to restoration in the project area as payments for many of the schemes initiated have yet to start and there are relatively few schemes in the higher restoration/creation tiers.

There are a number of ways that schemes could be improved to meet Biodiversity Action Plan targets. The following are some suggestions:

Countryside Stewardship

- Change scoring system to favour BAP priority species and habitats.
- Take original applications into account when assessing additions to schemes.
- Standardise quality of applications accepted into scheme.

Suffolk River Valleys ESA

- Include arable field margins in options available.
- Increase the difference in payments between the lowest and highest tiers.

All schemes

- Substantially increase levels of funding to encourage the restoration of key habitats particularly at key locations.
- Simplify application procedures.

The following benefits came from the trial:

- 137 restoration projects were initiated during the trial; 45% were wholly initiated by the Project Officer, amounting to 214 ha and 8,768 m of restored habitats.
- £108,000 was spent on restoring habitats within the trial area
- The overall vision which centred on biodiversity has contributed to the increase in the area of BAP priority habitats being restored.
- Better quality applications for Countryside Stewardship have resulted from advice given via the Project. 80% of applications have been successful compared to the national average of between 44% and 54%.
- Landowners valued advice given by the Project Officer. 68% of owners found verbal advice useful and 45% said that grant advice was also useful.
- Good working relationships were developed with partners.
- There is an improved understanding on landowners part in delivering BAP targets.

7. A vision for the future

Habitat restoration could be improved on a wider scale by:

- Reforming CAP so that the management of existing habitats and the creation of new habitats is a pre-requisite to receiving subsidies for agriculturally productive areas.
- Setting incentive levels to reflect actual costs, particularly in the case of critical habitats at key locations.
- Making grants easier to obtain for work to enhance BAP priority species and habitats.

The Habitat Restoration Project could be improved by:

- Increasing the Project's time scale.
- Increasing Project Officer time.
- Providing additional funds for appropriate restoration projects.
- Increasing the publicity of the project.
- Providing a free source of labour for appropriate projects.
- Extending the scope of the trial to cover the whole Natural Area.

7.1 Suggested improvements to the project

The Renewing the Alde Project was successful in stimulating the restoration of some priority habitats and in the case of those for which targets were not achieved, the constraints were identified.

The following aspects worked well at a local level and could be used on a wider scale to help implement the aims and objectives of the Habitats and Species directive, BAP and the Natural Areas Profiles:

- regular face-to-face contact with land owners;
- having a holistic vision of an area with preferred zones where priority habitats should be restored;
- having the sole aim of increasing biodiversity.

Provision of the following might have increased the effectiveness of the Project:

- additional funding for the restoration of critical habitats at key locations;
- practical help;
- examples of best practice of habitat and species management;
- increasing Project Officer time;
- increasing the publicity of the Project

7.2 Extending the scope of the project

The 103 square kilometres of the trial area are very similar in many respects to the rest of the Suffolk Coast and Heaths Natural Area. The proportions of agricultural land, large coniferous plantations and semi-natural habitats are similar and the conflicts between agricultural requirements, nature conservation and public access occur throughout the Natural Area. With suitable funding, the aims and objectives of the Renewing the Alde Project could be extended to cover the whole of the Natural Area with little or no amendment. This would enable the objectives of the Habitats and Species Directive and the Biodiversity Action Plan to be implemented on a wider scale using the experience gained from the smaller trial area.

7.3 Best means of delivering BAP targets

In the case of those priority habitats that have been restored during the trial, similar methods could be adopted to deliver those targets on a wider scale.

However, in the case of the creation of heathland, grazing marsh and reedbeds, factors such as inadequate levels of incentives, the requirement for specialist knowledge and low levels of potential income prevented these options being taken up by sufficient numbers of private land owners to enable targets to be met.

Reversal of fragmentation on a large enough scale to achieve the targets set out in the Biodiversity Action Plan Steering Group Report (UK Biodiversity Steering Group, 1995) is only likely if constraints are removed, the reform of the Common Agricultural Policy takes the targets into account or funding is made available to purchase agriculturally productive land at key locations to create and manage priority habitats.

8. References

ENGLISH NATURE. 1997. *The Suffolk Coast and Heaths Natural Area*. Peterborough.

MITCHLEY, J., BURCH, F. & LAWSON, C. 1998. Habitat Restoration Project: development of monitoring guidelines. *English Nature Research Reports*, No. 284. Peterborough: English Nature.

NATURE CONSERVANCY COUNCIL. 1990. *Phase 1 survey handbook*. Peterborough: NCC.

STEWART, A., PEARMAN, D.A. & PRESTON, C. D. 1994. *Scarce plants in Britain.* Peterborough: Joint Nature Conservation Committee.

UK BIODIVERSITY STEERING GROUP. 1995. *Biodiversity: The UK Steering Group Report.* Vols. 1 and 2. London: HMSO.

WILLIAMSON, B. 1997. *The habitat restoration project in Suffolk: Renewing the Alde.* Peterborough: English Nature.

WILLIAMSON, B. & HORTON, P. 1997. *Renewing the Alde Trial Area Report.* Peterborough: English Nature.

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10. Appendices

Appendix 1. The areas or lengths of all habitats and their percentages of the total trial area before restoration

Habitat	Area (ha)	% of trial area
Broadleaved mixed and yew woodland Lowland wood pasture and parkland Other	 47 799	 0.4 7
Coniferous woodland	847	8
Heathland and acid grassland	716	7
Neutral grassland Coastal and floodplain grazing marsh Other	 327 10	 3 0.1
Calcareous grassland	3	0.02
Fen, marsh and swamp Reedbed	 60	 0.6
Standing open water	35	0.3
Rivers and streams	242	2
Littoral sediment Saltmarsh and saline lagoons Intertidal mud and sand	 161 407	 1.5 4
Supra littoral sediment Coastal sand dunes Coastal vegetated shingle	 9 42	 0.1 0.4
Supra littoral rock	3	0.02
Inland rock	0.5	0
Improved grassland	1,138	10.5
Arable and horticultural	3,950	36
Built up areas and gardens	39	0.4
Unsurveyed areas (including sea)	2,005	18
No match between Phase 1 and BAP	3	0.02
Boundary and linear features	***312765m***	

Appendix 2. Financial options for restoration

1. MAFF

1.1 Countryside Stewardship

This scheme provides revenue and capital payments for the management of a wide variety of key habitats, historic features and traditional land uses with additional payments for the provision of new public and educational access. Acceptance into an agreement is discretionary, and lasts for 10 years.

The scheme is not available for any operations that would be otherwise eligible for payments under the Suffolk River Valleys Environmentally Sensitive Areas scheme.

1.2 Non-rotational and rotational set-aside

Payments are made for set-aside land that falls under field margin (20 m wide), grassland or natural regeneration management options. Relevant areas of land are eligible for the basic set-aside payment under the Arable Area Payments Scheme.

1.3 Suffolk River Valleys Environmentally Sensitive Areas

Revenue and capital payments are made for the ecological enhancement of land adjacent to some Suffolk river valleys. The agreements are for ten years with an optional break clause after five years. The payments are tiered, reflecting the management practices; the highest payments are given for those management practices which provide the greatest benefit to wildlife. Additional payments are given for the provision of new public access. The boundary of the ESA area is shown in Figure 7.

1.4 Habitat Scheme

Revenue payments are given for the creation of saltmarsh. The payments vary subject to detailed management plans and necessary consents or agreements for capital works. The agreement must be consistent with the provision of effective and sustainable coastal defence.

1.5 Farm Woodland Premium Scheme

Revenue payments are made for woodland that is planted on qualifying agricultural land that has been planted under the Woodland Grant Scheme. Payments are given over 15 years for broad-leaved plantations and over 10 years for conifers.

1.6 Organic Aid Scheme

This is aid available to farmers during the period of conversion to organic production. Payments are progressively reduced over five years and vary depending on current land use.

2. Forestry Commission Woodland Grant Scheme

Capital payments are made for tree planting with the highest payments available for planting on arable land or improved grassland. 70% of the payment is made after planting and the remaining 30% five years later. There is a capital payment for re-stocking with broad-leaved species. Additional payments are available for woodlands of special environmental potential; any woodland that provides public access; woodland that needs to be protected from grazing stock; and for any work needed to facilitate natural regeneration.

3. Suffolk County Council Conservation Grants

Capital payments of up to 40% of costs are available for the creation and management of a wide variety of habitats for small projects not covered by the other schemes.

4. English Nature Schemes

4.1 **Wildlife Enhancement Scheme**: Revenue and Capital payments are available for up to 100% of the costs of managing Sites of Special Scientific Interest. Grants for other projects not on Sites of Special Scientific Interest can be available up to 50% of available costs. These are discretionary payments.

4.2 **Action for Bittern Project**: Provides funding for reedbed rehabilitation and extension in England.

4.3 **Habitat Restoration Project**: Funds were allocated to cover the costs of restoration projects not included in other Environmental Land Management Schemes.

5. Suffolk Coastal District Council.

Parish tree planting. Trees and materials only are supplied.

Other mechanisms

The following were also used as options to assist in the implementation of the project:

- FWAG Landwise and Whole Farm Plans;
- Heritage Lottery Fund through Tomorrow's Heathland Heritage;
- European Union LIFE funds;
- Practical assistance from the Coast and Heaths Project and the Suffolk Wildlife Trusts' Sandlings Project;
- Grants from the Alde/Ore Association;
- Grants from Species Recovery Programme;
- Grant from Plantlife;
- Landowners own funds.

Appendix 3. The types of habitat restored across the entire trial area, the mean parcel size and the number of landowners

HABITAT	Mean Parcel size	No of sites	No of holdings
Heathland	9ha	45	15
Grazing marsh	17ha	8	4
Other grassland	1ha	1	1
Reedbeds	3ha	2	2
Estuarine habitats	30ha	1	1
Ponds	1ha	9	?
Woods/orchards	1ha	11	5
Hedges	270m	26	?
Arable field margins	470m	24	5

Appendix 4. The original extent of habitats, the percentage restored and the original targets

Habitat	Area / length of existing habitat	Potential area / length	Area/length of restored / created habitat	% restored/ created	Original Target
Heathland/ acid grassland	716ha	4839ha	345ha restored	48%	Manage existing
			100ha created	14%	Increase area by 20%
Grazing Marsh	327ha	2481ha	140ha restored	43%	10% into tier 2, 5% into tier 2a
			8ha created	2%	Increase area by 5%
Saltmarsh	161ha	2,481ha	31ha created	19%	Redress losses
Reedbeds	60ha	2481ha	6ha restored	10%	Improve quality of existing
			0ha created	0%	Increase area by 20%
Other grassland	1151	?	1ha created	0.1%	Achieve favourable management of farmland
Hedges	174,710m (includes 11158m of species rich hedges)	?	4,948m restored to species rich status	3%	Achieve favourable management of 25% of species rich hedges by 2002
			1072m of species rich hedge created	0.6%	Achieve favourable management of farmland
Ponds	35ha	?	8ha	23%	Achieve favourable management of farmland
Broadleaf woodland	846ha	?	12ha	1%	Achieve favourable management of farmland
Arable field margins	0m	607920m	11281m	N/A	Improve quality of existing

Appendix 5. Habitat types before and after restoration, how this relates to the vision habitat and the total area/length of habitat restored

Before restoration	After restoration	Habitat on vision	Total area (ha) /length (m)
Broad-leaved woodland	Heathland	Heathland	7 ha
Broad-leaved plantation	Broad-leaved plantation	Heathland	2 ha
Broad-leaved plantation	Broad-leaved plantation	Wetland	3 ha
Orchard	Orchard	Heathland	0.3 ha
Coniferous plantation	Thinned coniferous plantation	Heathland	2 ha
Coniferous plantation	Heathland	Heathland	2 ha
Mixed woodland	Broad-leaved plantation	Heathland	5 ha
Mixed woodland	Heathland	Heathland	15 ha
Scrub	Wet grassland	Wetland	0.1 ha
Scrub	Heathland	Heathland	11 ha
Scrub	Open water	Wetland	0.1 ha
Scrub	Sand martin cliff	Heathland	0.4 ha
Wet grassland	Wet grassland	Wetland	3 ha
Wet grassland	Wet grassland/ open water	Wetland	1 ha
Wet grassland	Running water	Wetland	493 m
Improved grassland	Semi-improved grassland	Farmland	0.4 ha
Improved grassland	Broad-leaved plantation	Wetland	0.8 ha
Improved grassland	Wet grassland	Wetland	105 ha
Heathland	Heathland	Heathland	405 ha
Heathland	Red-tipped cudweed	Heathland	1 ha
Reedbed	Reedbed	Wetland	6 ha
Reedbed	Running water	Wetland	381 m
Reedbed	Open water	Wetland	0.5 ha
Reedbed/wet grassland	Reedbed	Wetland	0.4 ha
Pond	Pond	Heathland	0.2 ha
Pond	Pond	Farmland	0.3 ha
Pond	Pond	Wetland	0.1 ha
Saltmarsh/brackish lagoons	Saltmarsh/brackish lagoons	Wetland	31 ha
Farmland	Wet grassland	Wetland	7 ha
Farmland	2m margin	Farmland	1124 m
Farmland	2m margin	Wetland	3391 m
Farmland	2m margin	Heathland	6324 m
Farmland	6m margin	Wetland	441 m
Farmland	Acid/neutral herb-rich grassland	Heathland	0.7 ha
Farmland	Heathland	Heathland	4 ha
Farmland	Broad-leaved plantation	Heathland	2 ha

Before restoration	After restoration	Habitat on vision	Total area (ha) /length (m)
No hedge	New hedge	Wetland	243 m
No hedge	New hedge	Farmland	271 m
No hedge	New hedge	Heathland	558 m
Hedge	Hedge	Farmland	1526 m
Hedge	Hedge	Heathland	3390 m

Appendix 6. Habitats before and after restoration in relation to the type of landowner

Before restoration	After restoration	Total area (ha) /length (m)	Type of owner/ manager
Broad-leaved woodland	Heathland	7 ha	Farmer/NGO
Broad-leaved plantation	Broad-leaved plantation	2 ha	Farmer / C&H
Broad-leaved plantation	Broad-leaved plantation	3 ha	Non-farmer
Broad-leaved plantation	Broad-leaved plantation	0.5 ha	Farmer
Mixed woodland	Broad-leaved plantation	5 ha	Farmer
Improved grassland	Broad-leaved plantation	1 ha	Farmer
Farmland	Broad-leaved plantation	2 ha	Farmer
Orchard	Orchard	0.3 ha	Farmer
Coniferous plantation	Thinned coniferous plantation	2 ha	Farmer
Coniferous plantation	Heathland	2 ha	FE / NGO
Mixed woodland	Heathland	1 ha	FE / NGO
Mixed woodland	Heathland	14 ha	Non-farmer
Scrub	Heathland	4 ha	Non-farmer/NGO
Scrub	Heathland	8 ha	FE / NGO
Heathland	Heathland	3 ha	Non-farmer / C&H
Heathland	Heathland	67 ha	NGO
Heathland	Heathland	22 ha	Farmer / NGO
Heathland	Heathland	196 ha	Non-farmer /NGO
Heathland	Heathland	42 ha	FE/ NGO
Heathland	Heathland	70 ha	Non-farmer
Heathland	Heathland	2 ha	Farmer
Farmland	Heathland	4 ha	Farmer
Scrub	Open water	0.1 ha	NGO
Wet grassland	Wet grassland	1 ha	Non-farmer
Scrub	Wet grassland	0.1 ha	NGO
Improved grassland	Wet grassland	105 ha	Farmer
Wet grassland	Wet grassland	2 ha	Non-farmer/C&H
Wet grassland	Wet grassland/ open water	0.7 ha	NGO
Reedbed	Open water	0.4 ha	Farmer
Pond	Pond	0.5 ha	Farmer
Wet grassland	Running water	493 m	NGO
Reedbed	Running water	381 m	NGO
Improved grassland	Semi-improved grassland	0.4 ha	Farmer
Reedbed	Reedbed	5 ha	Farmer
Reedbed	Reedbed	1 ha	NGO
Reedbed/wet grassland	Reedbed	0.4 ha	NGO

Before restoration	After restoration	Total area (ha) /length (m)	Type of owner/ manager
Saltmarsh/brackish lagoons	Saltmarsh/brackish lagoons	31 ha	NGO
Farmland	Wet grassland	7 ha	Farmer
Farmland	2m margin	10839 m	Farmer
Farmland	6m margin	441 m	Farmer
Farmland	Acid/neutral herb-rich grassland	0.7 ha	Farmer
No hedge	New hedge	243 m	Non-farmer
No hedge	New hedge	829 m	Farmer
Hedge	Hedge	4916 m	Farmer
Heathland	Red-tipped cudweed	1 ha	Non-farmer/ NGO
Heathland	Red-tipped cudweed	0.1 ha	Farmer/ NGO
Scrub	Sand martin cliff	0.4 ha	Farmer

Appendix 7. Funding mechanisms and amount spent per hectare for each habitat

Habitat after restoration	Total spent (£) July 96 – March 99	Amount spent per hectare (£)	Total area (ha) /length (m)	Funding mechanism
Broad-leaved plantation	222	112	2 ha	C&H
Broad-leaved plantation	7929	1315	6 ha	WGS
Orchard	350	1296	0.3 ha	CS
Heathland			7 ha	RSPB Funds
Heathland			2 ha	FE
Heathland	1000	73	14 ha	HRP/own funds
Heathland	2000	685	3 ha	HRP/ C&H
Heathland	2165	249	9 ha	ESA
Heathland	14575	93	156 ha	CS
Heathland	18112	99	183 ha	HLF
Heathland			70 ha	Own funds
Red-tipped cudweed	455	590	0.8ha	Plantlife/ Species Recovery
Red-tipped cudweed			0.1 ha	Plantlife
Sand martin cliff	1095	3042	0.4ha	HRP
Open water			0.45 ha	ESA
Open water	500	5556	0.1 ha	HLF/ESA/ ALDE ORE ASSOC.
Wet grassland			0.1ha	HLF/ESA
Wet grassland	1323	1214	1 ha	HRP
Wet grassland	apply 1999		112 ha	ESA
Wet grassland	practical help		2 ha	C&H
Wet grassland/ open water	to start 2001		0.65 ha	HLF/ESA
Running water	3003	8/m	381 m	HLF/ESA
Running water	to start 2001		493 m	HLF/ESA
Semi-improved grassland	93	251	0.4 ha	CS
Reedbed			5 ha	EA
Reedbed	1700	1223	1 ha	HLF/ESA
Pond	2605	6512	0.4 ha	CS
Pond			0.1 ha	EA
Saltmarsh/brackish lagoons	32,133	1048	31 ha	EU Life / Habitat Scheme
2m margin	32517	3/m	10839 m	CS
6m margin	3090	7/m	441 m	CS
Acid/neutral herb-rich grassland	773	1120	0.7 ha	CS
New hedge	1,021	4/m	243 m	ESA
New hedge	1658	2/m	829 m	CS
Hedge	9833	2/m	4916 m	CS

The above calculations of amount spent for restoration projects are based on standard payment rates for Woodland Grant Scheme, Countryside Stewardship and Suffolk River Valleys ESA. For work done using HLF funding, the rate is an average of the overall expenditure per hectare. There are many variables associated with the above costs, some are capital costs, and some are revenue. The percentages and rates paid to landowners varies from scheme to scheme and some of the projects were initiated later than others, with consequently less spent on these projects than on projects that were initiated at the start of the project. Some projects have been wholly funded by the landowner and some have been partially funded by landowners, either in actual costs or in kind.

Appendix 8. A comparison of some of the incentives available under the Countryside Stewardship and Suffolk River Valleys ESA schemes

Item	Incentive available from Countryside Stewardship	Incentive available from SRV ESA
Creating grassland	£280/ha/yr plus supplement of £40/ha/yr (for five years) to establish a herb-rich sward	£270/ha/yr plus supplement of 50% of costs to establish herb-rich sward
Managing existing dry grassland	£85/ha/yr plus supplement of £30/ha/yr for old meadows<3ha	£80/ha/yr (improved) £190/ha/yr (unimproved)
Raising water levels on suitable grassland sites	Not available (owners are expected to raise levels on suitable sites)	£50/ha/yr (winter) plus £50/ha/yr (extending into spring)
Creating hedges	£2/m	£1.75/m
Managing existing hedges	£2/m	£3/m
Managing arable field margins	£35/100m/yr (6m) £15/100m/yr (2m)	Not available
Creating ponds	£3/m for first 100sq. m, £0.5/m thereafter	50% of costs
Restoring ponds	£2/m for first 100sq. m, £0.5/m thereafter	50% of costs
Creating reedbeds	£40/ha/yr (for five years)	50% of costs
Managing reedbeds	£100/ha/yr	£100/ha/yr
Scrub clearance	£50 base payment plus £100 - £500/ha (depending on density)	£100 - £500/ha (depending on density)
Mechanical control of bracken	£80 base payment, plus £30/ha	£50/ha
Chemical control of bracken	£50 base payment, plus £70/ha	£100/ha

Appendix 9. Main differences between the ESA and Countryside Stewardship Schemes

ESA	Countryside Stewardship
Not discretionary	Discretionary
Local objectives	National objectives
High staff / owner ratio	Low staff / owner ratio
Five-year break clause	No break clause
Easy to add items after agreement has started	Difficult to add items after agreement has started
Tiered payments	Single payment rates
Arable field margins excluded	Arable field margins included
Fertiliser use permitted in some instances	No fertiliser use permitted
Payment for raising water levels	No payments for raising water levels
Claims made separately for capital items	Capital items included in main agreement

Appendix 10. Analysis of the follow up questionnaire

Q: Have you created any habitats or carried out specific management for particular species since July 1996?

24 (77%) have started restoration projects since July 1996. A summary of restoration projects, numbers of participating landowners and funding mechanisms used is shown in the following table:

Habitat or species	Number of landowners	Funding mechanisms
Woodland	8	1, 5, 6
Ponds	4	1, 4, 7
Wet grassland	4	6, 7
Hedges	6	1, 4, 7
Heathland/acid grassland	8	1, 2, 3, 4
Saltmarsh	1	8
Arable field margins	3	4
Reedbeds	1	7
Dry grassland	1	4
Old orchard	1	4
Vegetated shingle	1	10
Dyke management	2	1, 7
Sand martin cliff	1	2
Tree planting	2	1
Bird boxes	1	1
Woodlark/nightjar	2	3, 4
Black poplar	1	1
Little tern	1	10
Stone curlew	1	1
Red-tipped cudweed	1	9

1= own funds, 2=habitat restoration project funds, 3=FC funds, 4=Countryside Stewardship, 5=WGS, 6=Coast and Heaths Project, 7=ESA, 8=Habitat Scheme, 9=Plantlife/Species recovery, 10=Local authority

Q: Would you like to see any changes to the current range of schemes?

The most frequent suggestions were increasing the levels of incentives, simplifying the schemes and reducing the time between applications being received and confirmed.

Complete list of comments:

Closer links with Biodiversity Action plan priority species and habitats.
Another scheme to enhance wildlife in conjunction with farming.
Increase the percentage of costs for creating reedbeds under the ESA scheme.
The Woodland Grant Scheme is too bureaucratic, the sums of money are too small and it doesn't take account of local climatic or soil conditions.
The schemes should be simplified.
Introduce funds for controlling deer.
Increase percentage of costs paid by schemes.
Agreements should be sorted out more quickly.
The Woodland Grant Scheme is too slow.
Funds should be made available to put up housing for stock
ESA should be more flexible to take organic crop rotations into account
Grants should reflect the true costs of work.
Less bureaucracy.
More support.
Schemes don't always fully cover costs, particularly labour costs.
The premiums should be increased for the higher tiers in the ESA scheme.

Q: Did the Renewing the Alde Project help?

16 (52%) have been helped by the project, of these, 11 would not have carried out the work without the help of the project.

Q: Do you intend to manage or create any particular habitats in the future or carry out work for particular species?

24 (77%) intend to start restoration work in the near future. Details of intended restoration projects, numbers of landowners that will carry out the restoration and intended funding mechanisms are shown in the following table:

Habitat or species	Number of landowners	Funding mechanisms
Woodland	7	15
Ponds	9	147
Wet grassland	7	7
Hedges	6	47
Heathland/acid grassland	7	13711
Saltmarsh	1	11
Arable field margins	5	4
Reedbeds	1	711
Dry grassland	1	4
Old orchard	1	4
Vegetated shingle	1	10
Islands in ponds	1	7
Dyke management/creation	4	17
Convert to organic production	2	12
Overwintering and breeding waders	1	78
Starlet sea anemone	1	13
Reptiles	1	1
Bird boxes	6	1
Bat boxes	2	1
Bright wave moth	1	10
Black poplar	1	1
Silver-studded blue	1	3
Stone curlew	1	1
Pollard willows	1	7

1= Own funds, 2=Habitat Restoration Project funds, 3=FC funds, 4=Countryside Stewardship, 5=WGS, 6=Coast and Heaths Project, 7=ESA, 8=Habitat Scheme, 9=Plantlife/Species recovery, 10=Local authority, 11=HLF, 12=Organic aid 13=EU life fund

Q: How did you find out about the Project?

The greatest proportion (48%) of landowners found out about the Project from information posted by the Project Officer. The remainder found out from a variety of other sources including telephone calls and contacts with other organisations.

Information source	Numbers of owners
Posted information from Project Officer	15 (48%)
Phone call from Project officer	5 (16%)
Via Suffolk Wildlife Trust	3 (10%)
Via Tim Sloane (ESA Officer)	2 (6%)
At a Coast and Heaths conservation sub-group meeting	2 (6%)
Via the Alde & Ore Association	1 (3%)
Via MAFF	1 (3%)
Article in local paper	1 (3%)
Via NFU	1 (3%)

Q: Have you found the Project useful?

26 (84%) of land owners/ land managers found the Project useful.
Elements of the project that people have found useful:

- Verbal advice 21(68%)
- Providing contacts with other organisations: 18 (58%)
- One-stop-shop for grant advice: 14 (45%)
- Help with form filling: 5 (16%)

Other things that were useful for land owners:

- FWAG plans
- enthusiasm
- information on wider aspects of conservation management
- helping to re-launch local heathland creation initiative
- useful point of contact
- raising awareness of activity in project area
- farm walks
- source of information and advice
- generally raising awareness
- providing on-going support

Other publications that people found useful:

- Pond heaven
- EN/EA booklet: managing ponds for wildlife
- EA booklets: Otters and river management, buffer strips
- RSPB fact sheets: management for bird species

- Game Conservancy Trust leaflets: set-aside management, beetle banks, management of field margins
- EN booklets: Management of ancient woodland, Guide to care of ancient trees, great crested newts
- MAFF: summary of grants
- FWAG fact sheets: fertilisers and the environment, creating wildflower swards, hedge management,
- BTO/hawk & owl trust fact sheets: How to make nest boxes for raptors

Q: What else could the Project help with?

- practical support
- additional funding for large-scale projects
- monitoring of wildlife on the farm
- provide examples of best practice of habitat and species management

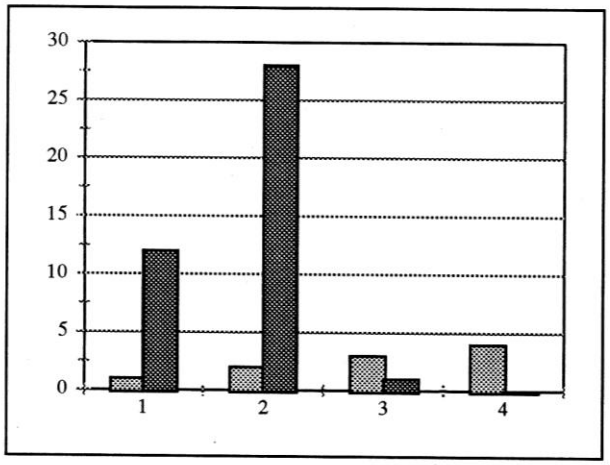
Q: Which publications have you found useful or interesting?

The range of responses to the newsletter, the local leaflet and the vision summary were all similar, with approximately twice as many people finding them interesting rather than useful. 13% of respondents or less do not remember seeing these publications, the figure being 0% for the newsletter. The reaction to the habitat creation fact sheets was different, reflecting their function as guidance notes for habitat creation. The greatest proportion (48%) of landowners found the fact sheets useful, 19% said they were interesting and 39% didn't remember seeing them. The latter response was not unexpected since habitat creation fact sheets were only given to those undertaking habitat creation, unlike the other three publications, which were sent to all land owners in the trial area.

Responses to the publicity material

1 = useful, 2 = interesting, 3 = neither useful or interesting, 4 = don't remember seeing it

Figure 1. Newsletter



Additional comments: would like more information about local events and suppliers, is well - designed and well written, is concise, is full of relevant material, about the right length, easy to read, not enough information about actual project, would like it to come out every three months, keeps people in touch with what's happening in the project area.

Figure 2. Local leaflet.

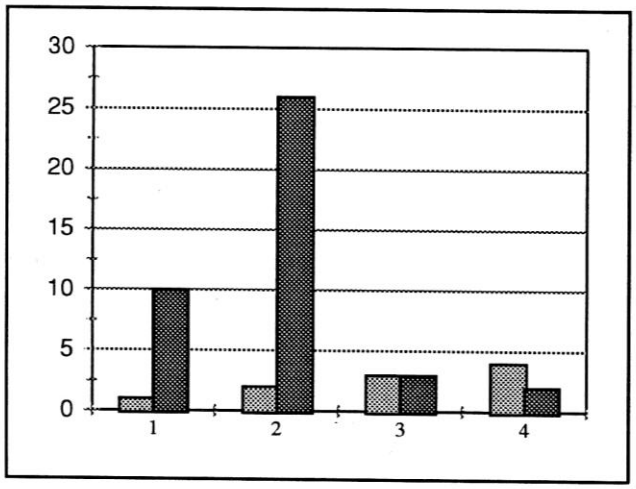
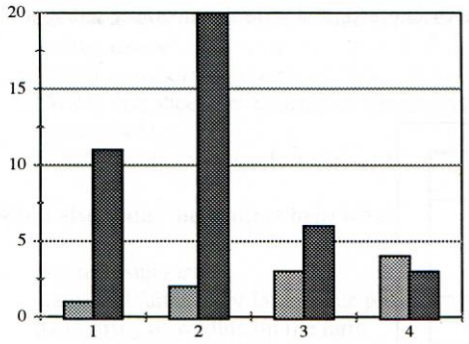
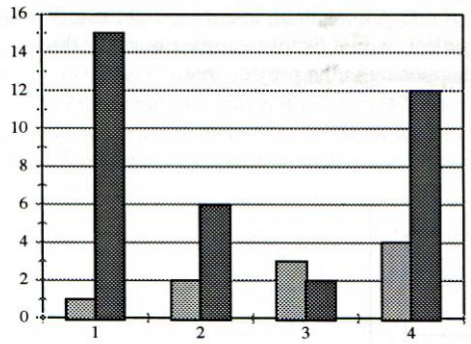


Figure 3. National leaflet.



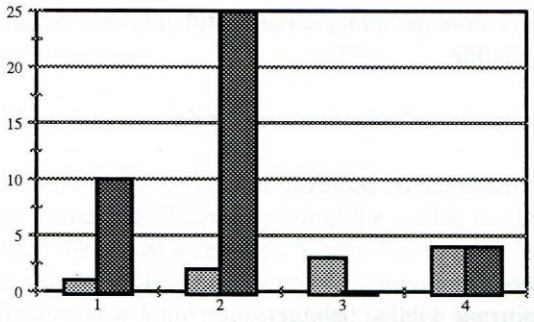
Additional comments: too general, well presented and concise, liked the colour.

Figure 4. Habitat creation fact sheets.



Additional comments: references useful.

Figure 5. Vision summary.



Additional comments: visual approach works well, focused, particularly interesting.

Q: In an ideal world, what would you like to do with the land that you manage for farming?

Several farmers said that they would like to farm organically. Others would like to be able to continue with mixed farming or farm as traditionally as possible.

Q: In an ideal world what would you like to do with the land that you manage for farming?

Comments:

Farm organically.
Generate own electricity by windmill.
Restore barn and use it for business.
Continue grazing.
To make enough money to be able to re-invest in estate and farm to encourage wildlife.
Use traditional breeds of cattle.
To farm as traditionally as possible.
Maintain a balance between wildlife and producing food.
Modify farming practices to fit in quotas and wildlife.
Revert arable land to wet grassland.
To continue to grow crops well without EU bureaucracy.
Continue with mixed farming.
Look at alternative crops.
Rent out grazing to minimise labour input.

Q: In an ideal world, what would you like to do with the land that you manage for the benefit of wildlife?

Many replies emphasised the need to manage and restore locally characteristic habitats for the benefit of local wildlife; other replies were more biased towards the management of traditional farmland habitats.

Comments:

Maintain and restore natural heathland landscape.
Forget about farming altogether and create a reserve including some heathland.
Maintain traditional habitats to benefit local wildlife.
Continue to manage land sympathetically.
To make the land as attractive to wildlife as possible.
Restore reedbed.
Manage and create hedges, plant trees, restore and create ponds.
Minimal interference.
Create a kingfisher cliff.
Manage grazing marshes primarily for waders.
Continue current management and retain important wildlife habitats.
Would like to be able to control water levels and prevent pollution.
Maintain a balance between wildlife and producing food.
Continue with present management and improve upon it.
Would prefer not to use any chemicals.
Would like more staff on the ground and have management plans for all sites.
Build a scrape or a freshwater lagoon.
Enhance land to attract birds and restore locally characteristic habitats.
As much as possible.
Create 30 acres of open water.
Plant more trees and hedges, create a more attractive landscape, and employ more people to manage the land.
Increase the amount of heathland.
Continue managing for the benefit of birds.
Create a pond.

Q: Which habitats do you think are especially important in this area of Suffolk?

The responses, in order of frequency, are shown below:

Heathland	26 (84%)
Grazing marshes	21 (68%)
Saltmarsh	16 (52%)
Reedbeds	16 (52%)
Woodland	11 (35%)
Hedges	11 (35%)
Ponds	10 (32%)
Field margins	9 (29%)
Dry grassland	9 (29%)

The following were not included in the suggested list, but were additional suggestions by respondents:

Wetland habitats	5 (16%)
Estuarine habitats	4 (13%)
Mosaic of habitats	4 (13%)
Saline lagoons	2 (6%)

Shingle	2 (6%)
Wet heaths	1 (3%)
Fen	1 (3%)
Farmland habitats	1 (3%)
Coastal habitats	1 (3%)

Q: How do you balance commercial interests and wildlife conservation?

Farm businesses have great difficulty balancing commercial interests and wildlife conservation many farmers said that they would be unable to carry out work for the benefit of wildlife without the aid of incentives. Where farming was not the main source of income, landowners were not constrained by commercial interests and felt that the balance between commercial interests and wildlife conservation was not something they had to consider.

Comments:

Have to compromise to a certain extent to make grazing attractive to grazier.
Determined by many factors - driven by national policy.
Land is 2/3 farmed, 1/3 leased to NGO.
The balance is in favour of wildlife conservation.
Need ESA grants to support projects.
Practice good farming husbandry with minimal interference with field edges and woodland.
The commercial side is irrelevant; there are very small profits from arable land.
Try to make farm more attractive in landscape terms, don't farm very intensively.
With great difficulty.
Do the best to balance wildlife and farming.
Do work to benefit wildlife when the farm is profitable.
Farm as sympathetically as possible whilst farming profitably.
Use less productive areas for wildlife, e.g. field margins.
Would not be able to carry out work without grant from Countryside Stewardship.

Q: If you would like to, what stops you doing more for wildlife?

The most frequent responses were a lack of money or time.

Comments:

Not enough time or money.
Age, energy and money.
Would like more land.
Profitability of farmed areas.
Financial and social considerations.
Being a single parent.
Lack of interest.
Nothing.
Finding the right project.
Ignorance.
Lack of labour.

Renewing the Alde

Figure 1 **Location of Trial Areas**

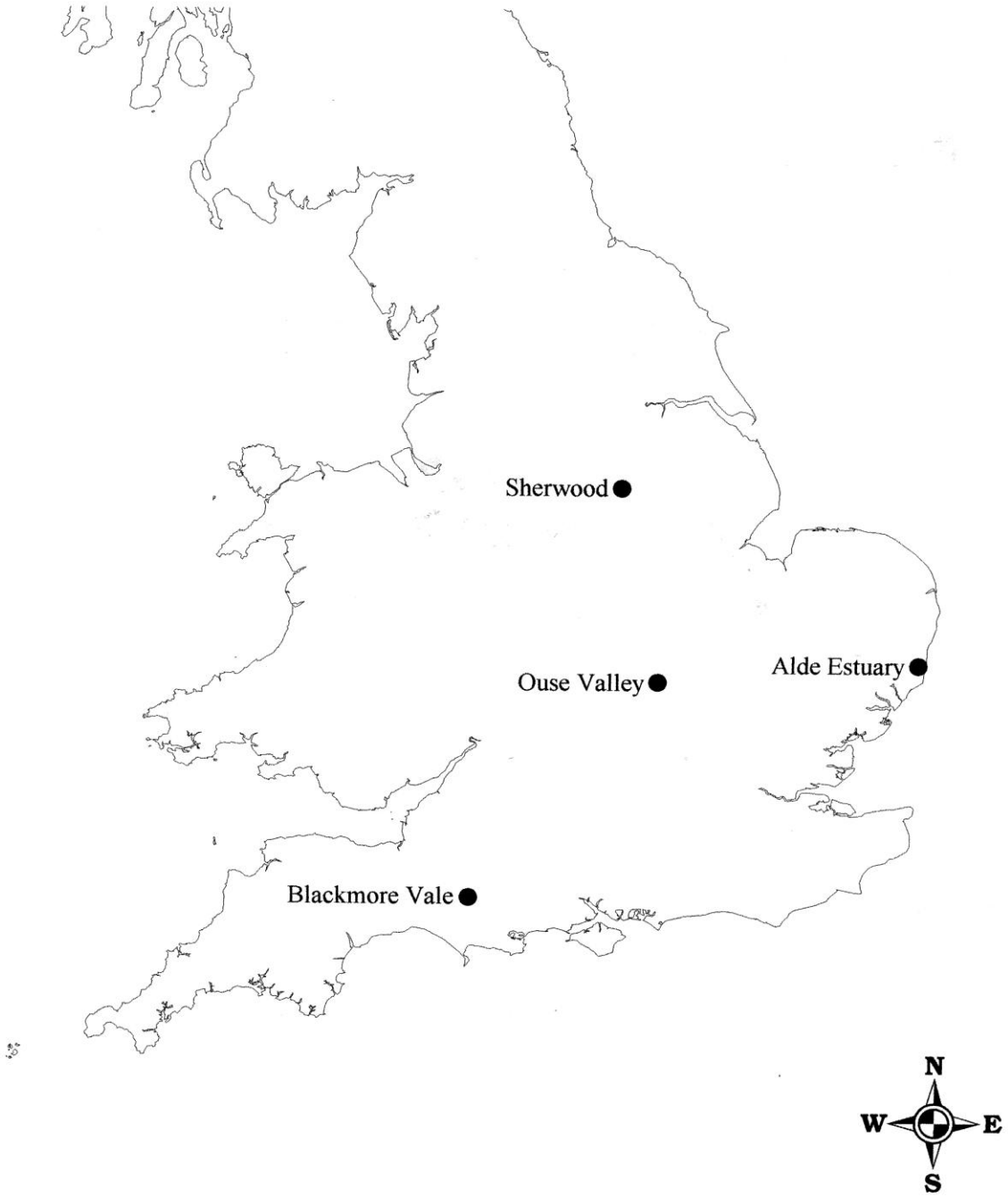
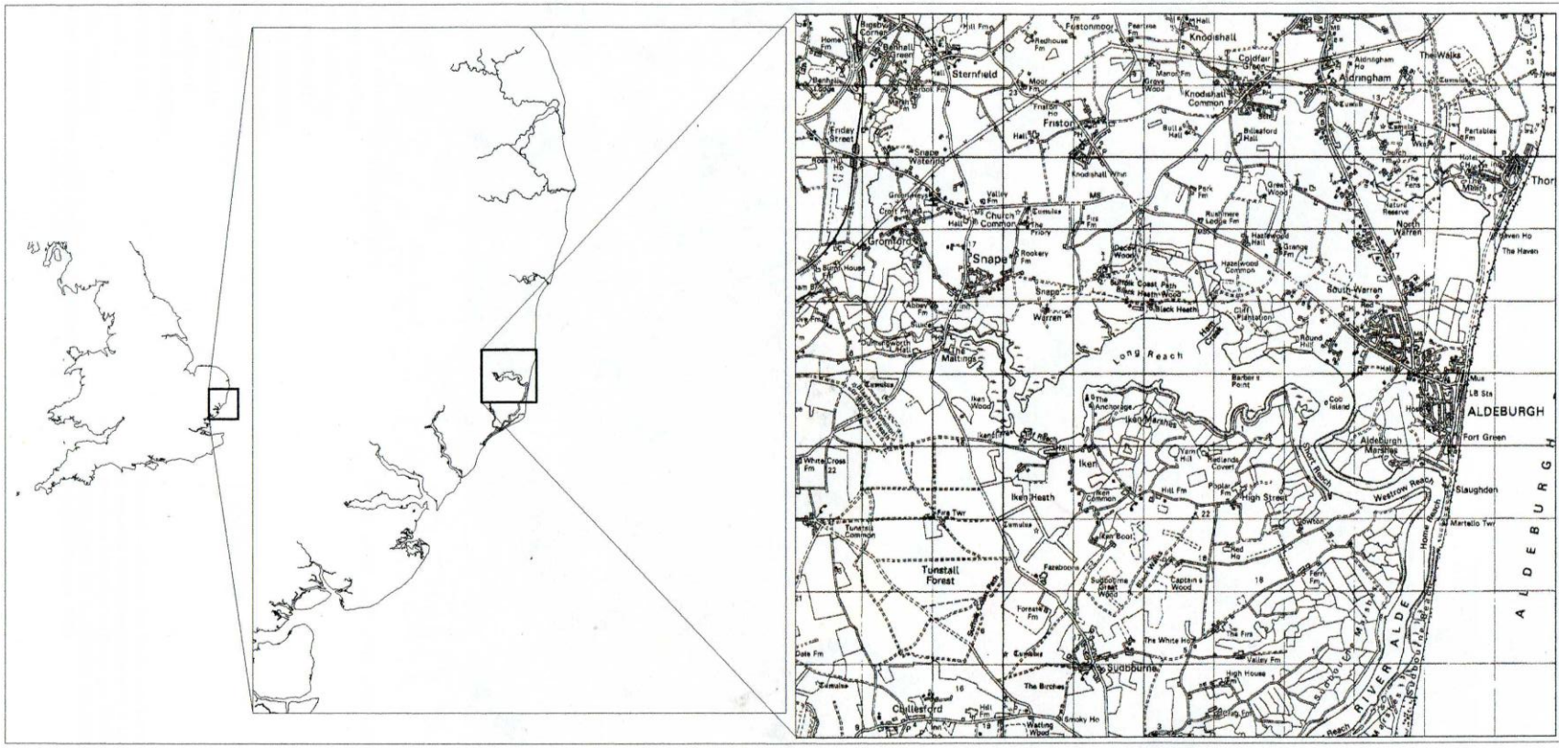


Figure 2 **Renewing the Alde - Location of Trial Area**



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Scale of Main Map Window - 1:80,000

Figure 3 **Distribution of BAP Broad Habitats**

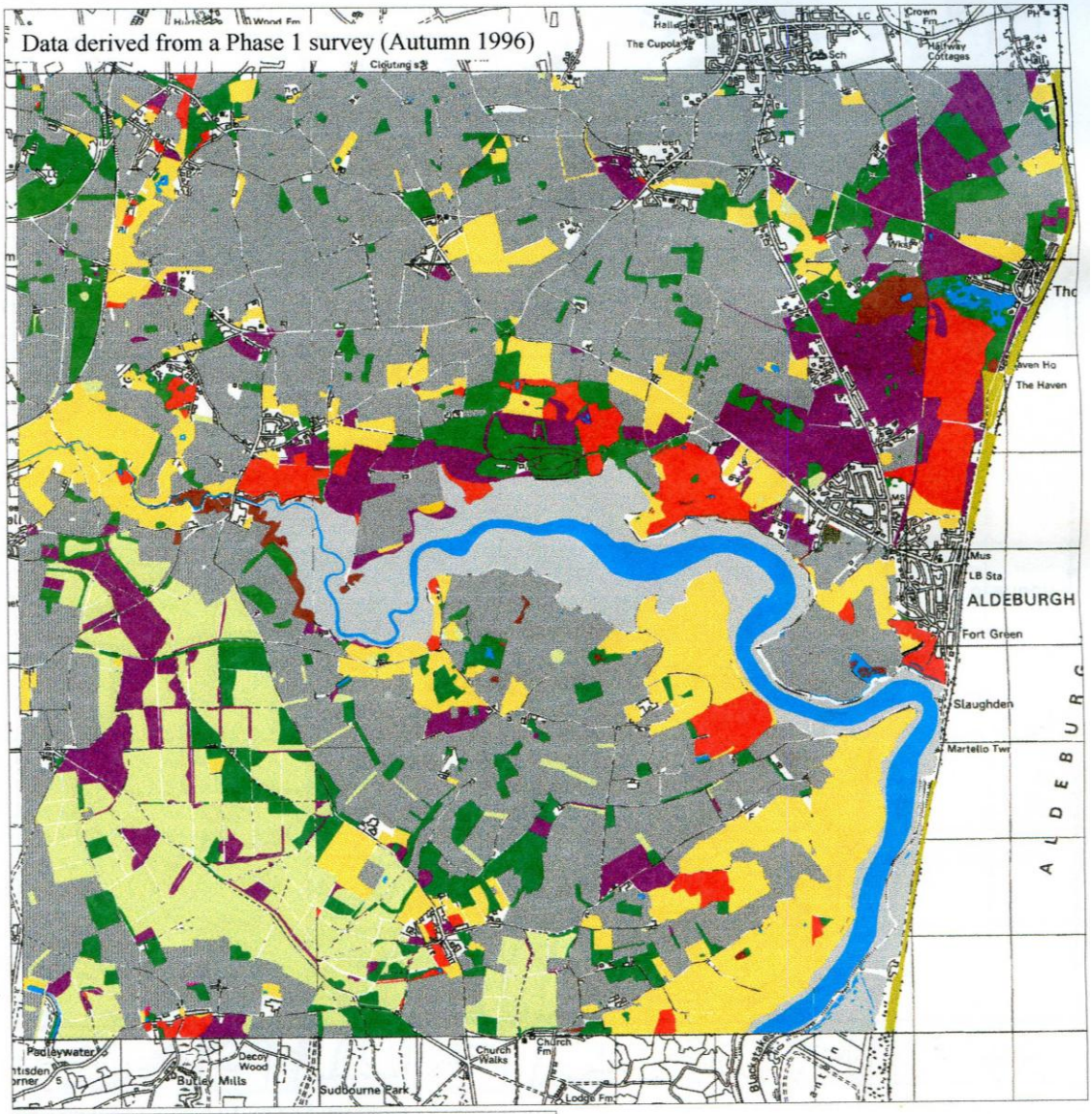


Figure 4 **Renewing the Alde**

Distribution of BAP Priority Habitats with Broadleaved, mixed and yew woodland

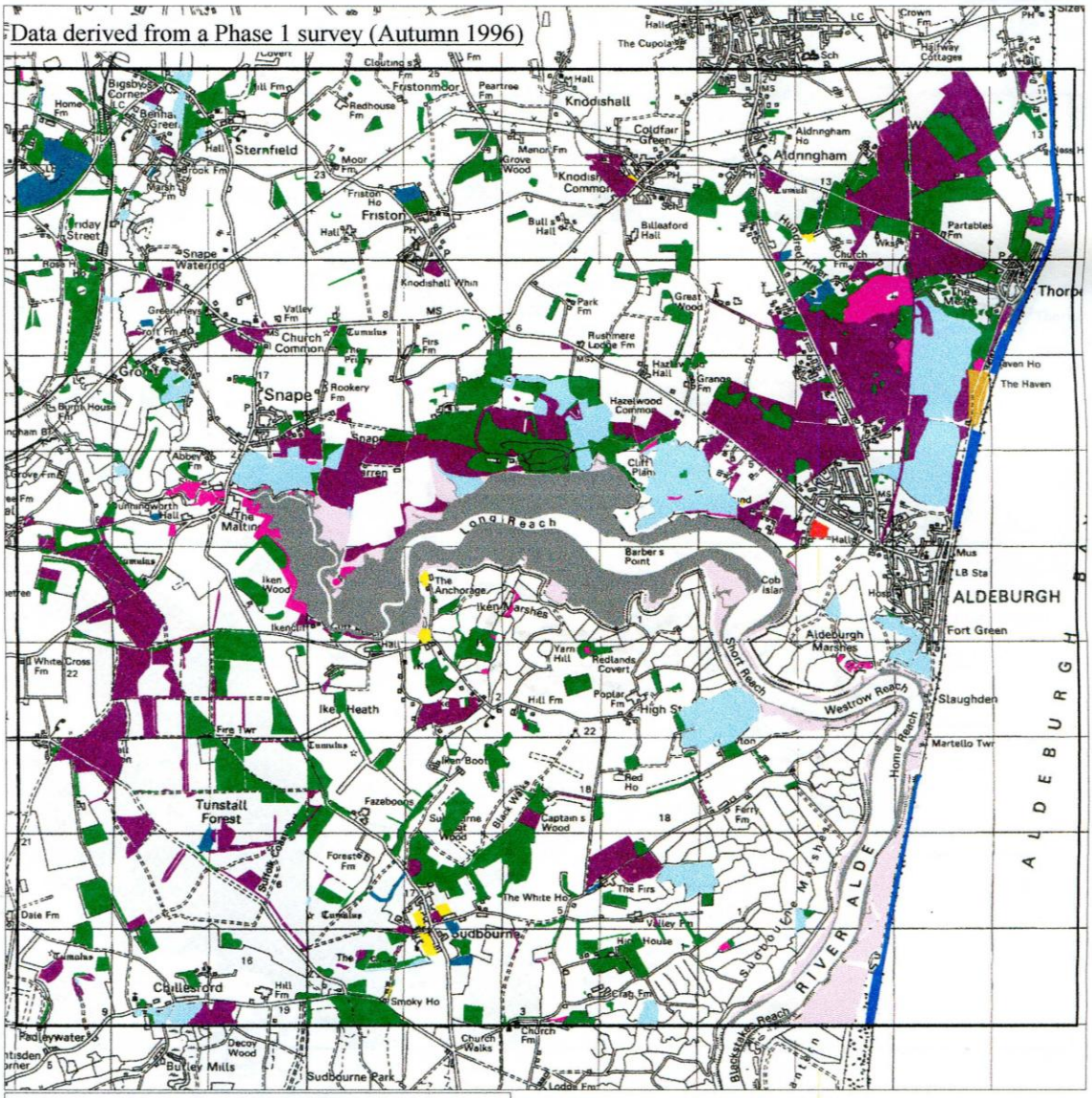
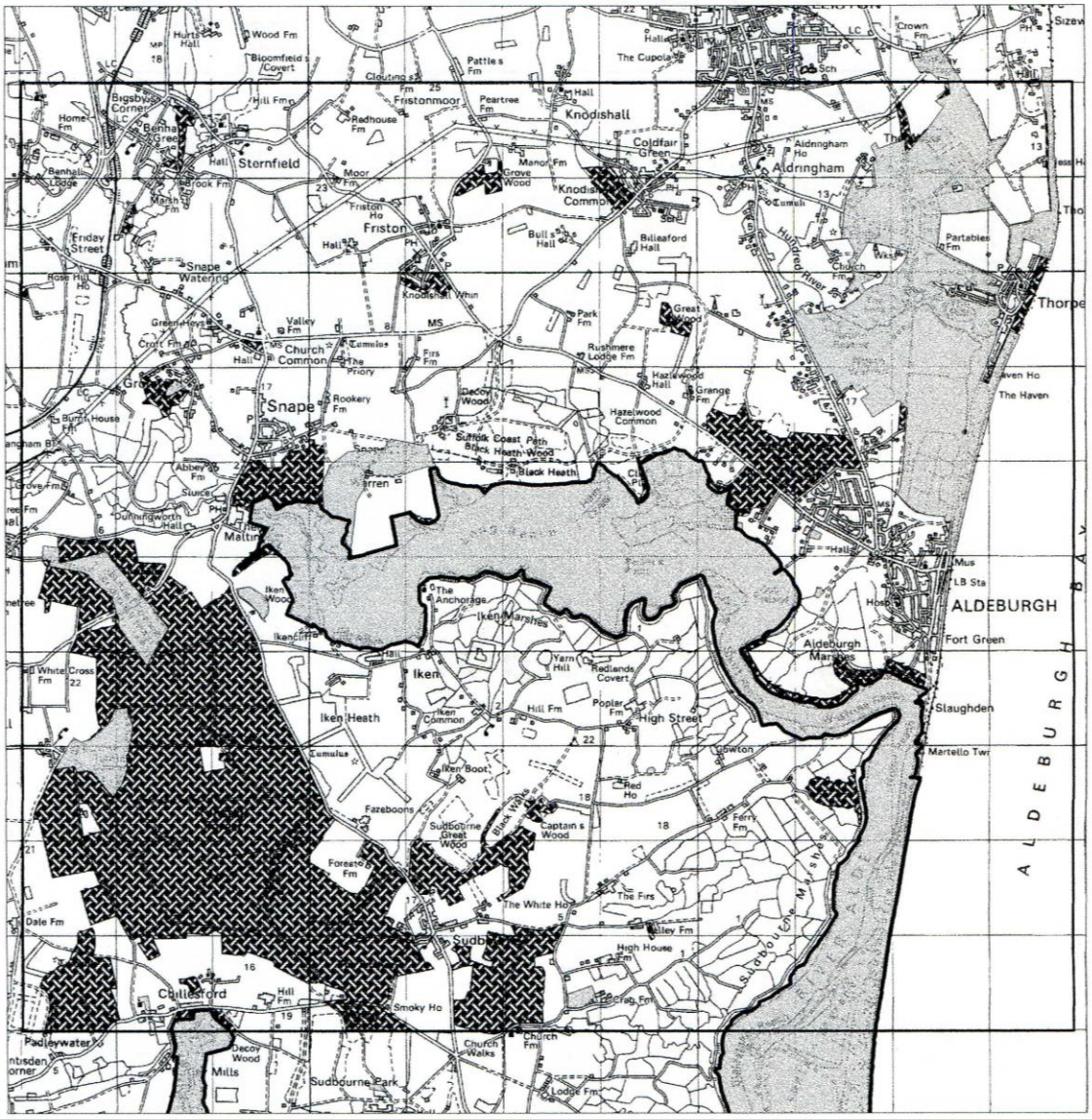


Figure 6 **Location of Designated Areas**



County Wildlife Site (CWS)

Site of Special Scientific Interest (SSSI)

SSSI and Ramsar/SPA

1:60000

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Figure 7 Boundary of Environmentally Sensitive Area

Figure 8 **A 'Vision' for Habitat Restoration**

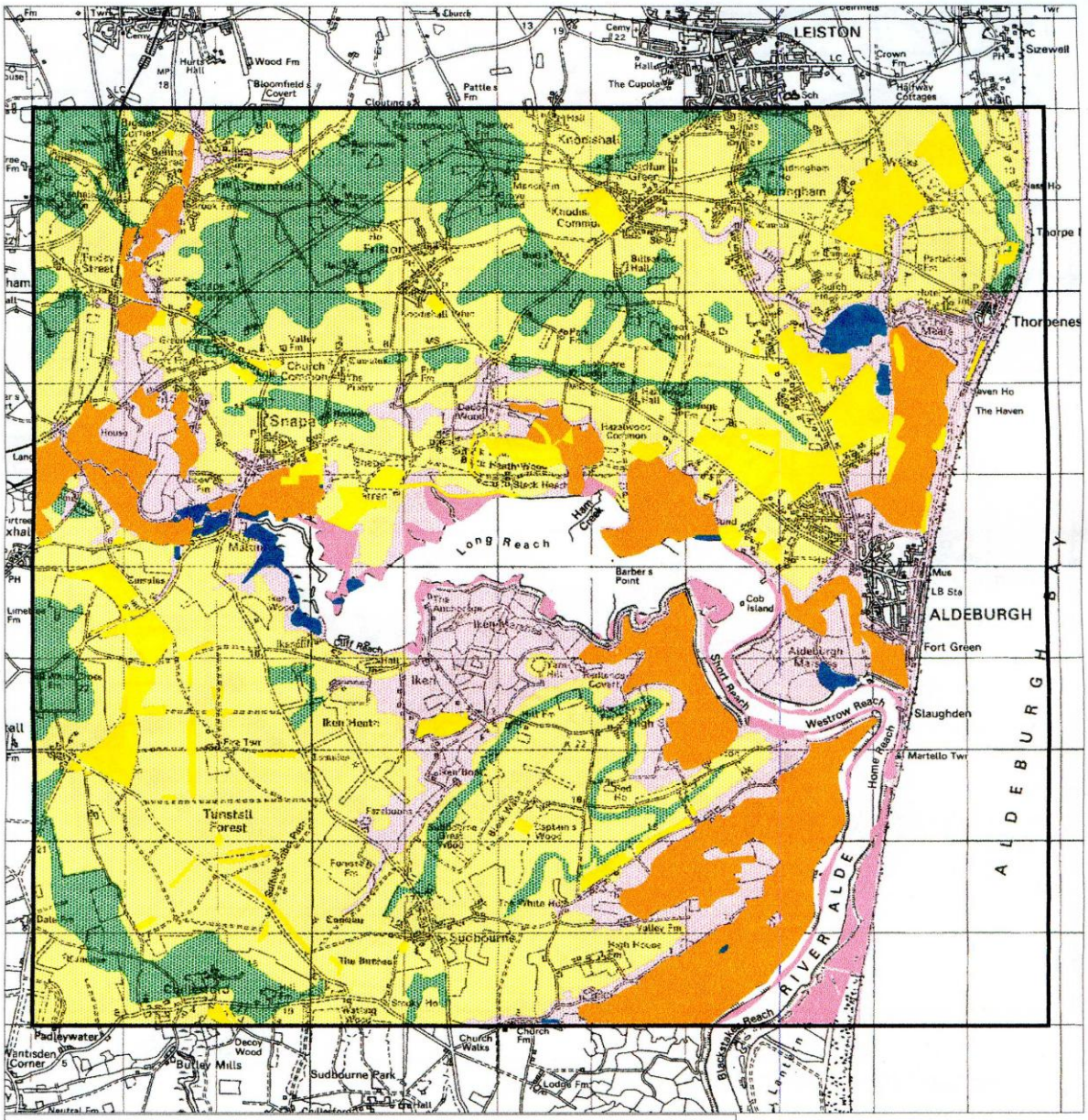

Figure 9 **Restoration/Creation projects - since 1996**