CASE STUDY 8

FIELDHOUSE FARM
FLOODPLAIN WOODLAND

FARMING FLOODPLAINS for the FUTURE

Catchment	Sow
Holding Type	Primarily arable
Existing Land Use	Poplar plantation
Project Area	0.87ha [Total holding : 99ha]
Techniques	Floodplain woodland re-planting

Poplars prior to felling, and after re-stocking

Background

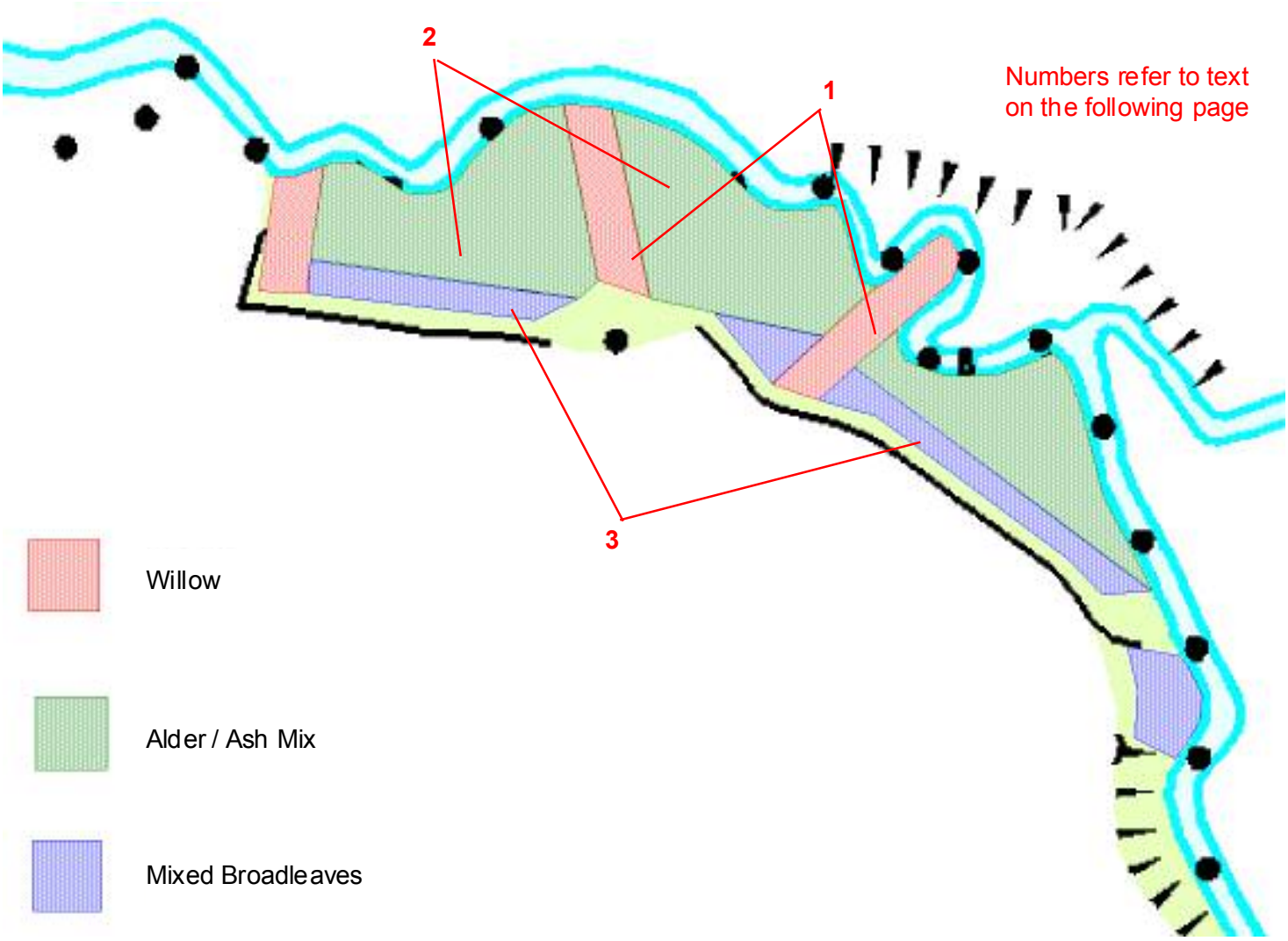
Located in the middle reaches of the River Sow, Fieldhouse Farm is primarily an intensive arable holding growing cereals and oilseed rape. Grassland fields adjacent to the river are grazed by cattle reared for an associated dairy enterprise. Woodland is a notable habitat on the holding, including areas associated with the floodplain of the River Sow and tributary watercourses.

The landowner has been prepared to co-operate with the project, being keen to enhance the countryside where possible (particularly in terms of woodland planting), although this on the proviso that it should be at no direct cost to the farm business.

Timber processing in progress

The Project

This second project at Fieldhouse Farm focuses on an area of woodland within the 1-in-100 year floodplain of the River Sow. The existing poplar plantation has been felled, with the re-stocking designed to provide dual benefit : slowing of flood flows and planting of a future timber crop for the farm.



Timber stacked ready for removal from site

Consultations.....

- Biological Records
- Natural England (re CSS agreement and funding)
- Environment Agency (re need for consent + waste management exemption)
- Forestry Commission (re licencing)

.....& Consents

- Felling Licence
- Registration of exemption under waste management regulations (for the burning of 'lop and top')

Poplar plantation before and immediately after felling, and area re-stocked

A total of 84 mature poplar were felled, with an estimated volume of 142.8m^3. Although originally planted, most likely, for the manufacture of matches, the market for poplar is now limited - the timber generated by this project is to be chipped and used as fuel in a biomass CHP plant. The brash was burned on site, and the stumps treated to prevent re-growth.

A number of native trees (notably bankside willows and a number of oak) and the mature hedgerow around the boundary of the wood have been retained.

1 The main flood management benefit is achieved through the planting of bands of willow across the floodplain, strategically located to maximise the slowing of flows during flood events. Planted at 2 metre spacing (2500 trees / ha), each band comprises upto 5 staggered rows of lower-growing, shrubby varieties of willow (such as goat willow and grey willow).

2 The majority of the remainder of the site is planted with a mix of ash and alder, both native species likely to thrive in the damp conditions and provide a saleable crop for the farm. By mixing the 2 species (planted at 2.5metre spacing (1600 trees / ha)) the opportunity is provided to selectively thin when required, depending on which species is performing best on different parts of the site.

3 In order to add to the diversity of the woodland, the existing boundary hedge has been supplemented by the planting of areas of mixed native species comprising field maple, hawthorn, hazel, holly, rowan and wild cherry (again planted at 2.5metre spacing (1600 trees / ha)).

Band of willow planted across the floodplain

Future Management

- Aftercare will be required in the 2-3 years after planting, to include weeding and beating-up, to ensure effective establishment.
- Ideally, the bands of willow should be rotationally coppiced in order to maximise growth close to ground level and therefore the effectiveness of the plants in slowing flood flows. A variety of rotations are feasible, but ideally all willows should be cut at least once every 10 years, but no more than 50% of the width of any band should be cut at one time.
- The remaining areas of woodland should be thinned and otherwise managed in line with normal forestry practice.

Benefits

HYDROLOGICAL	Since the planting has occurred within the floodplain of the main River Sow, it is possible to model the effects using the existing hydraulic model. Through appropriate alteration of roughness coefficients for the floodplain, the model indicates that the new planting will raise water levels by just over 0.07m, with the effect noted 1.5 km upstream, equating to the attenuation of 1125m^3 of water.
HABITAT	Poplar plantation with limited under-storey replaced with 0.87ha of mixed native broadleaved woodland.
FARM BUSINESS	Poplar plantation of limited economic value, and at an age where deterioration imminent, felled. Area re-stocked with species more likely to provide a saleable crop in the future.

Burning of 'lop and top'

Costings

Felling & extraction of poplar	£ 2300	Natural England Grant (via CSS)	£ 3206
Re-planting	£ 3370	Landowner Contribution	£ None
TOTAL	**£ 5670**	Farming Floodplains for the Future	£ 2464

[Prices excluding VAT]