Restoring Floral Diversity to the Shannon Callows

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Project Background

The Shannon Callows represent the largest unregulated floodplains in north west Europe. These floodplains provide numerous ecosystem services, including water storage, flood attenuation, carbon storage and biodiversity protection. Much of the area has been designated as a Special Area of Conservation and Special Protection Area. The habitats on the Shannon Callows are composed of a mosaic of habitats which support a wealth of wildlife, including, plants, insects and birds. The meadows of the Shannon Callows are some of the finest examples of species rich grassland in Europe. They contain mosaics of unusual, and increasingly rare, plant communities that vary from callow to callow and from year to year. These plant communities rely on the annual mowing of the meadows by the farmers to maintain the diversity.

In recent years, a predominance of Meadowsweet (Filipendula) has developed on parts of the Shannon Callows. This dense cover of meadow-sweet results in unpalatable forage and evidence shows that plant species-richness has declined in recent years. Large herbs are known to out-compete and suppress many smaller species if left uncut (Grime 1979). It is probable that the dense swards of uncut vegetation are not conducive to nesting birds and therefore the direct effects of flooding are compounded by a change in herbage structure. In addition, nectar-feeding invertebrates, such as Syrphidae (hoverflies) benefit from forb diversity and must also have declined in numbers and diversity as a result of the development in recent years of a *Filipendula* monoculture-type sward.

There is an urgent need to address the spread of *Filipendula*, since it benefits neither the farmers nor biodiversity. This research aims to underpin advice to farmers on best practice and on restoration of the sward to species-rich palatable hay-meadow.

Overall Aim

The aim of this research is to experimentally test cutting regimes that might reduce the vigour notably of *Filipendula* and restore species-richness and therefore the fodder value of the hay, to the meadows.

With reference to selected specific sites, farmers are engaged in the experimental process under way. By means of a questionnaire, farmers' opinions are sought concerning the nature of the problem and their requirements to sustainably restore the meadows to their former value for hay. Specific questions will attempt to establish the perceived causes of the spread of *Filipendula* (locally known as 'agrimony').

Farmer involvement is critical to this research, not only in co-operation, but in suggesting solutions that are compatible with the farming community's continuation of sustainably cutting hay on the meadows.

Projected benefits of the research project

Practical advice to farmers in order to restore the agricultural and biodiversity quality of hay meadows.