

Science for Environment Policy

Abandoned wet grasslands can be rapidly restored

Wet grasslands abandoned less than 40 years ago can be successfully restored within a decade, a recent analysis suggests. By examining the findings of a range of studies, it identified the causes and consequences of abandonment and the key factors in successful restoration.

Wet grasslands, such as floodplain hay meadows, are semi-natural habitats with either a high [water](#) table or regular flooding, and are maintained by [agricultural](#) mowing or grazing. This human intervention prevents shrubs and trees taking over the land, and often results in valuable, [species-rich](#) habitats, contributing to High Nature Value Farmland¹. Although wet grasslands have been part of European agriculture for centuries, many areas are degraded by agricultural intensification or abandonment. In Finland and the east of the UK, for example, it is estimated that less than 1% of the original wet grassland habitats remain.

In this review, the findings of 76 studies of wet grasslands were examined to explore the causes and consequences of wet grassland abandonment and to evaluate restoration techniques. The studies highlighted that abandonment is of particular concern in central European and Baltic countries. For example, 90% of floodplain meadows in Estonia were abandoned in the 20th century.

The average time period since abandonment of the wet grasslands studied was 24 years, and there are complex socio-economic causes of abandonment. These include collectivism under the Soviet regime, economic viability, and agricultural intensification elsewhere.

The consequences of abandonment include increases in vegetation height and a build up of dead plant material. Abandonment is often followed by shrubs and trees moving into the area, but the rate at which this occurs depends to some extent on local conditions. For example, although studies show this can occur within five years of abandonment, dense reed coverage has been shown to delay this process for more than 20 years. The studies show that some wetland plant species can become extinct within just three years of abandonment.

Despite such changes, restoration can be successful in producing substantial improvements within ten years, if abandonment occurred less than 40 years ago, the studies suggest. After as little as two years of management activities, such as mowing or grazing, increases could be seen in the diversity of species present and the abundance of particular 'indicator' species that signal good ecosystem health. However, restoration to the exact previous state may never be achieved, and the speed and success of restoration also depends on specific characteristics of the site, such as the presence of trees.

The research identified key factors which affect the success of restoration. Firstly, the availability of seeds of the original wet grassland species is important. While seeds may be lying dormant in the soil, for some species these will need to be reintroduced by humans. Secondly, both flooding and livestock can be effective methods of dispersing seeds for establishing plants. 'Rewetting' of the area and the use of grazing livestock are therefore important restoration options.

It is also recommended that grasslands low in nutrients are prioritised for restoration, since many of the rarest wet grassland plants fare better under these conditions. Finally, the review warns about damaging invasive species potentially hampering restoration efforts.



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1. <http://www.high-nature-value-farming.eu/>