Controlling invasive willow *Salix* spp. on wet grassland by grazing with Hebridean sheep, Kingfishers Bridge, Cambridgeshire, England

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SUMMARY

On recently created wet grassland at a site in eastern England, willow *Salix* spp. was invading. It was cut, then 30 adult female Hebridean sheep and a Texel ram were introduced to control any regrowth. The sheep have kept the site clear of both newly sprouting willow shoots and willow seedlings.

BACKGROUND

In 1995, 61 ha of arable farmland at Kingfishers Bridge, eastern England, were converted into a mosaic of wetland wildlife habitats. Most of the site requires grazing to maintain it in suitable condition as without grazing the area would quickly convert to scrub and loose much of its wildlife interest. At a seasonally flooded wet grassland, willows *Salix* spp. were colonising from seed carried by wind from an adjacent belt of mature trees, resulting in willow shrub. Therefore, it was



Figure 1. Map of the Kingfishers Bridge habitats. 'Confused Flood' in the northeast corner, is indicated by the red circle.

decided to cut the willow by hand and introduce Hebridean sheep *Ovis aries* to graze, and hopefully control any willow regrowth.

ACTION

Since its creation in 1995, a 6 ha section of Kingfishers Bridge reserve, known as 'Confused Flood' (Fig. 1), was being invaded by willow scrub. In the winter of 2000, all the willow shoots within this section were cut as close to the ground as possible. Cut material was stacked. Subsequently, 30 adult female Hebridean sheep (Fig. 2) and one adult Texel ram were introduced (c. 5.2 head/ha). Hebridean sheep were chosen as this breed is particularly good at browsing scrub as well as being excellent mothers. In other areas of Kingfishers Bridge they were used to maintain the grass in good condition for wintering wildfowl which prefer short grass on which to forage, and for waders breeding in the summer. This hardy sheep breed remained outside all year round.

Between March and July the sheep were removed from areas with high densities of ground-nesting birds to avoid the risk of nests being trampled. Depending on the harshness of the winter the sheep were, when necessary, fed with hay or commercial sheep food. The health of the sheep was checked daily.

CONSEQUENCES

Vegetation development: Willow regrowth has totally been suppressed and establishment of new seedlings prevented since the introduction of the Hebridean sheep. At the site no willow shoot have been observed since the grazing sheep have been introduced. Wet grassland vegetation has established, with characteristic plant species including jointed rush *Juncus articulatus*, saw sedge *Cladium mariscus* and glaucous sedge *Carex flacca*.

Sheep management: The sheep are hardy enough to be left outside to graze year-round. They are easy to shepherd and can be excluded from areas where grazing is undesirable by erecting temporary electric fencing e.g. during the breeding season for breeding waders such as lapwing *Vanellus vanellus*. Every year the sheep have successfully produced offspring.

Conclusions: The Hebridean sheep have effectively kept the site totally clear of newly



Figure 2. Hebridean sheep *Ovis aries* at Kingfishers Bridge.

sprouting willow shoots and willow seedlings. This area has now developed into a wet meadow supporting breeding waders and wintering wildfowl.

REFERENCES

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