

**Reedbeds on a shoestring - Updated May 2012**  
A guide to creating *Phragmites australis* reedbeds on a budget.

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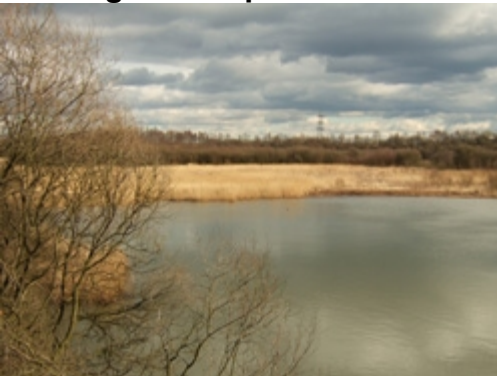
## Background



*Phragmites australis* reedbeds are a UK Biodiversity Action Plan (UK BAP) priority habitat, and although they have no formal legal protection, many of the species found in reedbeds are protected by both UK and international legislation. Twenty-five percent of the UK's reedbed coverage can be found in Greater Manchester, however, this constitutes less than one percent of the Greater Manchester's geographical area and what there is is fragmented.

Bolton Conservation Volunteers has twenty years experience establishing reedbeds at a number of sites. Our aim is to increase the coverage of these important habitats, but often the cost of such large projects can be excessive and beyond the means of small groups, or groups with limited budgets. To this end we have developed a number of low cost techniques to enable reedbeds to be created for next to nothing.

## Existing Techniques



The usual tried and trusted small scale method of reedbed creation include digging up rhizomes in Spring and planting them in beds of straw bales (the straw prevents the growth of blue-green algae as well as acting much the same way as mulch, suppressing competition). If you have a large budget you can use mechanical diggers to redistribute large volumes of existing reeds on a massive scale. But this is not an option if you have limited budget.

Use of commercially available root stock, often sourced from the Continent, is commonly employed in reedbed creation. Again this can be costly and also risks introducing non-native strains into the wider environment.

In all cases as the the newly planted reedbeds sprout and grow they are susceptible to grazing damage by geese. On large scale projects some loss is acceptable, but on smaller sites it can can be disastrous. At Doffcocker Lodge LNR, Bolton, an entire bed of hand planted reeds was lost to grazing.

Protecting the beds can be achieved by reducing the numbers of geese present at the site. Painting the eggs with paraffin wax is an effective but time consuming solution to geese control.

## Rhizome Planting

The most common method of obtaining native stock is to dig up rhizomes. This is usually done in April when the shoots are around 10 cm tall. The rhizomes then need to be translocated immediately to where they are needed and pit planted. This is very labour intensive and volunteers may have to work in quite cold conditions. This type of reedbed creation provides no protection to new shoots from grazing.

## BCV Techniques

Since 2009 Bolton Conservation Volunteers have been pioneering techniques to propagate, plant and protect reeds cheaply, these techniques include:

Propagation techniques	Planting Techniques
Reed seeds Reed plugs	Reed Cages Reed cuttings Brushwood barriers

It is important that all material used for propagation is native to the region.

## Rhizome Reed Plugs



This is similar to the more traditional technique of planting rhizomes but the rhizome collection process is carried out later in the year when the weather may be more favourable. You will need to dig up 30 cm<sup>2</sup> of rhizome, then wash and split apart into 10-15 pieces, preferably with root still attached.

These are then grown on in root trainers immersed in water. Place them in full sun and ensure the water level is kept topped up. The reed plugs will be ready for planting out in June when the shoots are 30-45 cm tall.

## Seed Reed Plugs

At one time it was thought impossible to grow reeds from seed in the UK. Work by Sophie Leadsom at Brockholes Wetland Nature Reserve has disproved this. Seeds can be collected from mature reeds and hung in a bag (non-plastic) in a greenhouse over Spring. This heat treatment kick-starts the germination process. The seeds then need to be scarified, or snipped up with a pair of scissors, and planted in root trainers much the same way as you would to grow trees from seed. The root trainers then left saturated in water, buckets or troughs may be useful, until they sprout and reach a height of 30-45 cm.

Both of these methods require plenty of space but can ensure a constant method of reed supply at almost almost zero cost.

## Selecting Areas for New Reedbed

Once you have your sprouting seed and rhizome plugs you need to plant them in a way that prevents grazing by geese. BCV have used chicken wire cages at both Moses Gate Country Park and Blackleach LNR to good effect. This technique has also been picked up by the Wildlife Trust.

In all cases select a secluded, non-shaded area away from public traffic and goose activity. A muddy area is also preferable as geese do not like to cross deep mud. Areas without other competing vegetation is also preferred, this has the added advantage of not requiring the use of straw bales.

### Planting in Reed Cages

The method found by BCV to be the most effective has been planting reed plugs inside wire cages. The cages protect the young reeds from browsing. As the reeds grow and create a more intimidating environment the geese should leave them alone.



To make the cages you will need a roll of 1m x 50m chicken wire. The wire is unrolled cut into 2.5m sections, this should give a cage diameter of around 80 cm. Each section is curved back on itself to form a 1m high cylinder, the loose ends of the sections are twisted together to stop the cylinder unrolling. The top and bottom of the cylinder can also be folded over by about 2cm to improve rigidity. Lids 1 m<sup>2</sup> should also be cut and put aside for later use. One 50m roll should be enough for twelve to fourteen cages with lids.



Groups of around six reed plugs are then planted, the groups should be placed in staggered formation 1.5m to 2m apart. The wire cages are placed over the reeds, staked in position, and the cages stables to the stakes. The lids can be added and held in place by plastic ties. Although the photo shows straw being used it is not necessary if the site is free of competing vegetation.



Gaps between the cages should be no more than 1m wide, this helps to deter geese. Any large gaps between cages can be filled with brushwood, or if you have them spare, free standing stakes.

Reeds planted using this method at Moses Gate in April 2009 showed new growth by September and within twelve months were 2m tall with no loss to grazing.

## Planting Reed Cuttings

This is the fastest method we have found to create reed beds, requiring nothing more than volunteers and a few pairs of scissors.



Select the area in which you want to create your new reed bed as noted previously. Then, using an existing reed bed, cut down stems as close to the base as possible using scissors.

Push the stems into the mud to a depth of around 50-60 cm so that several of the nodes (the bulges along the stem) are below ground, leaving 10-15cm, or 1-3 leaves above ground if possible; a ratio of 80% below and 20% above ground is recommended. Saturate the area with several hundred stems for maximum

effect. To protect the reeds from geese it is essential that the planting area is surrounded with brush wood.

Over a period of around 5 weeks you should see the cuttings apparently wither and die off. However, new roots will grow from the buried nodes and shortly after new shoots will appear.

## Conclusion

These methods are best suited to creating small, initial areas of reed beds on larger ponds and lodges, approximately 1 hectare minimum. Once established, these small stands of reeds can spread, 1m<sup>2</sup> of reed can spread to cover 100m<sup>2</sup> within a decade. However, these techniques present cheap, cost effective, and easily available technology to create and promote the spread of *Phragmites* reedbeds.

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