BritishFlora

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Coir Pallets & Coir Rolls

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Welcome

to BritishFlora's range of pre-established Bioengineering products, our Coir Pallets and Coir Rolls are specifically designed for sustainability and erosion control that sympathetically blend with the local environment.

Contents

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Coir Pallets

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COIR PALLETS

Description

We produce and pre-establish high quality Coir Pallets with mature aquatic vegetation for numerous applications.

Coir Pallets can be an excellent technique for establishing native marginal vegetation around lake edges, streams and rivers banks.

Coir Pallets are an organic living revetment and provide erosion control and rapid vegetation establishment.

Coir Pallets are produced as 1m and 0.5m wide units to suit various applications.

Coir Pallets are available unplanted or pre-established with mature native wetland plants. Standard plant mixes are available from stock all year round or specialist mixes can be contract grown to order.

We have developed a range of specific species mixes for use in all types of water bodies.

We plant our pallets at a high density and grow on at the nursery from between 12 to 24 months to ensure that the vegetation is dense and provides an instant hardy cover.

Very mature Coir Pallets growing within wet beds at Salix nursery

Tel: 01684 212027 Email: info@britishflora.co.uk www.britishflora.co.uk

“Mature Coir Pallets are often used for ecological restoration projects where mature vegetation needs to be established rapidly, noticeably for protected species such as Water Voles and Great Crested Newts.”

Purple loosestrife within pre-established Coir Pallets

Standard Mix Pre-established 2mx 1m Coir Pallet & 2m x1m Unplanted Coir Pallet

Coir Pallets are composed of coir fibre which is a sustainable waste product from the husk of a coconut

Applications

- **Water Vole Habitat Creation**
- **Wetland & Reedbed Establishment**
- **Habitat Ponds & Great Crested Newts**
- **River Restoration**
- **River Bank Erosion Control: Bioengineering Solutions**

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COIR PALLETS

Applications

Water Vole Habitat Creation

Water Voles are the fastest declining mammal in the UK and habitat loss has been a major factor in this decline.

Efforts to improve water vole habitat quality and quantity form a key part of any ecological restoration or habitat mitigation scheme and using mature "pre-established" Coir Pallets is a recognised best management practice in order to achieve these goals.

Our Water Vole rolls are grown for between 12 to 24 months so that the vegetation is mature and provides the fastest method of establishing water vole habitat available.

Plant species are selected that provide both cover and a food source and water voles have been observed amongst the vegetation within mature Coir Pallets within days of installation.

Pre-established Coir Pallets immediately after installation

Coir Pallets after 4 months creating mature Water Vole habitat

Reedbed planting after 6 weeks using pre-established Coir Pallets at the Medmerry Coastal Realignment Scheme

Reedbed planting after 10 months

Wetland / Reedbed Establishment

Many wetland schemes need a kick start in order to get the target vegetation established and mature "pre-established" Coir Pallets are an ideal establishment method.

Sometimes fluctuating water levels, river flow and grazing can make natural colonisation difficult or even impossible.

Pre-established Coir Pallets are grown to maturity and are therefore more resilient than any other form of plant establishment technique.

Newly installed Coir Pallets at Wisley Golf Course

Coir Pallets at Wisley one year later after major floods

River Bank Erosion Control: Bioengineering Solutions

Pre-established Coir Pallets can be used as a part of a "Soft Engineering" (Bioengineering) approach to dealing with bank erosion.

The mature planting and Coir Pallet (mix of coir fibres and coir netting) provide an excellent cover for exposed soils and the mature vegetation slows water flows locally to reduce erosive forces.

As our Coir Pallets are grown to maturity the root matrix is dense and will lock into the underlying soils very quickly and improve soil stability rapidly.

The result is a soft engineered bank with instant habitat and stability that becomes more resilient with time as the plants establish fully into the bank.

Habitat Ponds & Great Crested Newts

Our pre-established Coir Pallets are extremely effective for rapid establishment of pond habitat suitable for newts as part of a habitat mitigation or creation scheme.

Our Newt Mix is established at our nursery to full maturity with species known to provide newt habitat and uses plants that allow them to lay their eggs on.

River Restoration

Driven by the Water Framework Directive, river restoration has gained momentum in recent years.

Coir Pallets are widely used for marginal, emergent and bankside plant establishment within river restoration schemes.

It has been observed that establishing target native vegetation using mature pre-established coir pallets can reduce the risk of invasive plant species colonising river banks after restoration.

Installation of Coir Rolls and Pallets

6 months later

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COIR PALLETS

Unplanted and pre-established Coir Pallets

SPECIFICATION

Net Specification

Net Material:

3mm coir twine yarn in a square mesh pattern

Net Opening:

50mm

Stuffing

Virgin coir mattress fibre:

Not less than 50mm length, typically 100mm to 150mm

Optimum depth of evenly distributed stuffing:

40-50mm with approximately 2.5kg of coir fibre per m2 dry weight

Standard Pallet Sizes

2m x 1m x 40-50mm depth

2m x 0.5m x 40-50mm depth

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Pre-established Coir Pallets

- Coir Pallets are established at our specialist UK nursery with a proven track record of growing high quality coir products.
- Contract growing requires a minimum of 6 months establishment during the growing season (March - September).
- We grow a variety of species to suit different sites. Many species may be available in stock and if not they can be contract grown to order.
- Coir Pallets are planted at a rate of 20 plants per m^2 and grown outdoors in wet beds to create a hardy plant.
- Roots of plants are grown extensively through the bottom of the coir pallet to create a dense mat of root and rhizome.

Contact us for correct species choice at specification stage

Excellent rhizome growth on mature pre-established Phragmites Coir Pallet

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COIR PALLETS

Installation Guide

Key Delivery Notes

- Smaller orders will arrive palletised on a tail lift vehicle. Larger orders may arrive palletised on a curtain sided articulated vehicle and may require offloading machinery on site.
- Pre-established Coir Pallets vary in weight depending on maturity of vegetation and moisture content.

Measurements

	Size	Weight
Unplanted	2m x 1m	7kg
Pre-established	2m x 1m	20kg
Pre-established	2m x 0.5m	15kg

Delivery and Unloading Instructions

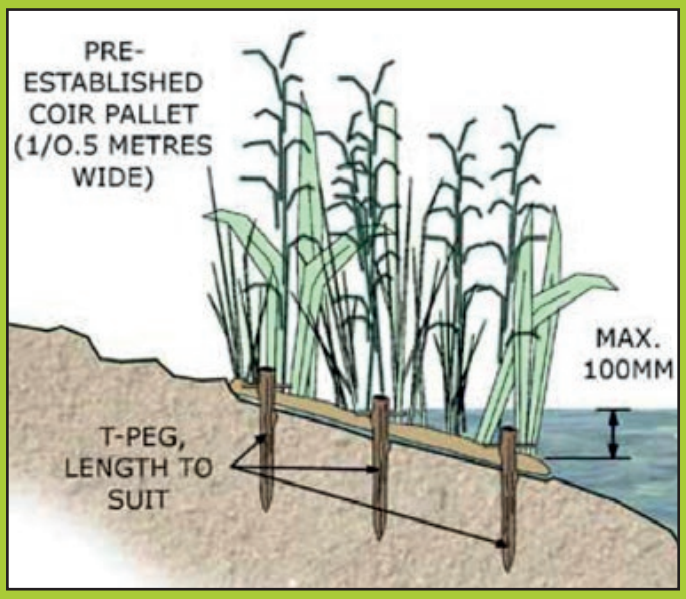
Unloading & Storage

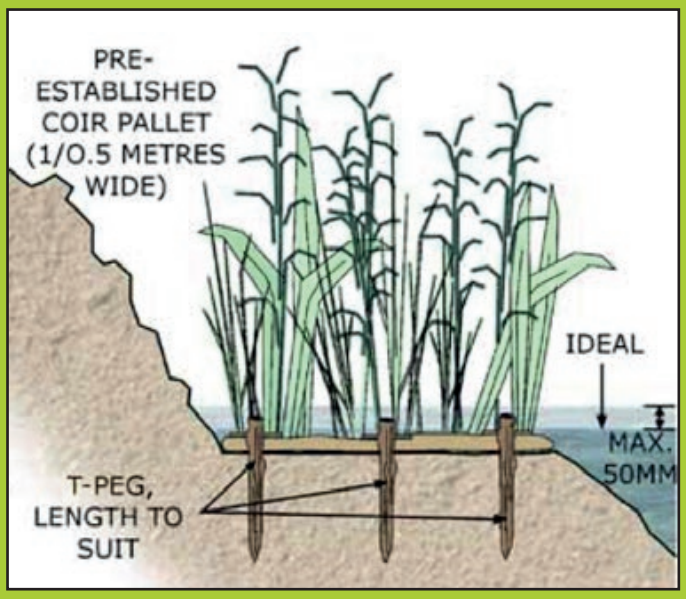
All Coir Pallets should be unloaded and laid out within 24 hours of delivery and kept wet at all times. In hot weather Coir Pallets should be regularly watered.

Ground Preparation and Water Levels

Prepare ground to create a flat and even profile, leaving a surface free from stones and other raised debris. The wetland edge should not be covered by more than 100mm of water. The trailing edge should not be too far up the bank, where the soil is dry.

Installation Instructions





1 Place the Coir Pallet on the surface and overlap with the next pallet if required. Typically, still water applications do not require an overlap and applications in flowing water require a 50-100mm overlap.

2 Insert fixing pegs (type of fixing as per design). Typically, fixings 3/side (6nr. / 2m long unit) should be used unless the specification states otherwise.

3 In high flow environments or in soft ground then attentional fixings, longer fixings or battens may be required.

4 Plants to be kept wet and not allowed to dry out.

5 Wildfowl/livestock fencing should be considered where there is a risk of grazing or trampling during the initial vegetation establishment period.

Fencing should be appropriately designed to account for any water flow, with mesh aperture that is specific to the type of waterfowl (or livestock) that is being excluded and any other site specific pressures/impacts.

Please note these are generic installation guides, if you have site specific issues please contact us directly.

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COIR PALLETS

PLANT SPECIES SELECTION

Standard Mix

Typically contains a mixture of plant species from the list below and will vary depending on availability.

- Alisma plantago-aquatica (Water Plantain)
- Apium nodiflorum (Fools Watercress)
- Caltha palustris (Marsh Marigold)
- Carex acutiformis (Lesser Pond Sedge)
- Carex flacca (Blue Sedge)
- Carex pseudocyperus (Cyperus Sedge)
- Eupatorium cannabium (Hemp Agrimony)
- Filipendula ulmaria (Meadowsweet)
- Glyceria maxima (Sweet Reed Grass)
- Iris pseudacorus (Yellow Flag Iris)
- Juncus articulatus (Jointed Rush)
- Juncus effusus (Soft Rush)
- Juncus inflexus (Hard Rush)
- Lycopus europaeus (Gypsywort)
- Lysimachia vulgaris (Yellow Loosestrife)
- Lythrum salicaria (Purple Loosestrife)
- Mentha aquatica (Water Mint)
- Myosotis scorpioides (Water Forget Me Not)
- Nasturtium aquaticum (Watercress)
- Phalaris arundinacea (Reed Canary Grass)
- Ranunculus flammula (Lesser Spearwort)
- Rumex hydrolaplathum (Water Dock)
- Schoenoplectus lacustris (Common Club Rush)
- Scrophularia auriculata (Water Figwort)
- Stachys palustris (Marsh Woundwort)
- Valeriana officinalis (Common Valerian)
- Veronica anagalis (Water Speedwell)
- Veronica beccabunga (Brooklime)

Monocultures

Available as contract grow only. Phragmites are usually a stock item.

- Alisma plantago-aquatica (Water Plantain)
- Caltha palustris (Marsh Marigold)
- Carex acutiformis (Lesser Pond Sedge)
- Glyceria maxima (Sweet Reed Grass)
- Iris pseudacorus (Yellow Flag Iris)
- Lythrum salicaria (Purple Loosestrife)
- Mentha aquatica (Water Mint)
- Myosotis scorpioides (Water Forget Me Not)
- Phalaris arundinacea (Reed Canary Grass)
- Phragmites australis (Common Reed)
- Ranunculus flammula (Lesser Spearwort)
- Schoenoplectus lacustris (Common Club Rush)

Floating Wetlands & Water Vole Mix

- Carex acutiformis (Lesser Pond Sedge)
- Carex pseudocyperus (Cyperus Sedge)
- Glyceria maxima (Sweet Reed Grass)
- Iris pseudacorus (Yellow Flag Iris)
- Lythrum salicaria (Purple Loosestrife)
- Mentha aquatica (Water Mint)
- Phalaris arundinacea (Reed Canary Grass)
- Schoenoplectus lacustris (Common Club Rush)

Newt Mix

- Apium nodiflorum (Fools Watercress)
- Lythrum salicaria (Purple Loosestrife)
- Mentha aquatica (Water Mint)
- Myosotis scorpioides (Water Forget Me Not)
- Potamogeton natans (Broad Leaved Pond Weed)
- Veronica Beccabunga (Brooklime)

Coir Pallet growing beds

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Coir Rolls

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COIR ROLLS

Description

We produce a wide range of pre-established Coir Rolls planted with high quality native plant species.

We plant our Coir Rolls at a high density and grow on at our nurseries from between 12 to 24 months to ensure that the vegetation is dense and provides a robust revetment and instant vegetation cover.

Mature Coir Rolls are often used for Ecological Restoration projects where mature vegetation needs to be established rapidly, noticeably for protected species such as Water Voles.

Coir Rolls are available unplanted or pre-established with mature native wetland plants. Standard plant mixes are available from stock all year round or specialist mixes can be contract grown to order.

Coir Rolls are produced as 0.2m and 0.3m diameter units as standard.

300mm diameter pre-established Coir Roll lifted from wetland nursery bed

"We produce high quality Coir Rolls with mature aquatic vegetation for numerous applications - an excellent technique for establishing native marginal vegetation around lake edges, streams and rivers banks."

Coir Rolls are made of coir fibre - a sustainable waste product

200 mm Coir Rolls installed on a small stream.

Coir Rolls are composed of coir fibre which is a sustainable waste product from the husk of a coconut

Applications

- **Water Vole Habitat Creation**
- **Wetland & Reedbed Establishment**
- **Habitat Ponds & Great Crested Newts**
- **River Restoration**
- **River Bank Erosion Control: Bioengineering Solutions**
- **Moorland Restoration**

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COIR ROLLS

Applications

Water Vole Habitat Creation

Water Voles are the fastest declining mammal in the UK and habitat loss has been a major factor in this decline.

Efforts to improve water vole habitat quality and quantity form a key part of any ecological restoration or habitat mitigation scheme and using mature "pre-established" Coir Rolls is a recognised best management practice in order to achieve these goals.

Our Water Vole rolls are grown for between 12 to 24 months so that the vegetation is mature and provides the fastest method of establishing water vole habitat available.

Plant species are selected that provide both cover and a food source and water voles have been observed amongst the vegetation within mature Coir Rolls within days of installation.

Coir Rolls installation before backfilling and Coir Pallets placed on berm in Autumn

6 months later

Rock Roll protection to face of Coir Rolls on reservoir shoreline

Reservoir shoreline one year later with excellent reed growth

Lake & Shoreline Protection

Bioengineering techniques can provide long term protection to shorelines whilst establishing valuable habitats.

Pre-established Coir Rolls are an integral bioengineering tool that can be used to protect shorelines and establish marginal vegetation that will provide long term stability and habitat.

When used in conjunction with a Rock Roll the resilience of a Coir Roll greatly increases meaning that they can be successfully used in more demanding and higher energy environments.

Newly installed Coir Rolls and Pallets River Restoration

Coir Rolls and Pallets one year later after major floods

River Bank Erosion Control: Bioengineering Solutions

Pre-established Coir Rolls can be used as a part of a "Soft Engineering" (Bioengineering) approach to dealing with bank erosion.

The mature planting and Coir Roll (mix of coir fibres and strong outer netting) provide an excellent cover for exposed soils and the mature vegetation slows water flows locally to reduce erosive forces. As our Coir Rolls are grown to maturity the root matrix is dense and will lock into the underlying soils very quickly and improve soil stability rapidly.

The result is a soft engineered bank with instant habitat and stability that becomes more resilient with time as the plants establish fully into the bank.

River Restoration

Driven by the Water Framework Directive, river restoration has gained momentum in recent years.

Coir Rolls are widely used for marginal, emergent and bankside plant establishment within river restoration schemes.

It has been observed that establishing target native vegetation using mature pre-established coir rolls can reduce the risk of invasive plant species colonising river banks after restoration.

Moorland Restoration

Restoring natural drainage processes is a key element within moorland restoration. Grip blocking using Coir Rolls is a more natural way of achieving this function.

Salix mini 'Coir Logs' have been approved throughout most UK sites as a suitable alternative to the heather bales, which can contaminate healthy areas of heather moorland, if infected with heather beetle.

Coir Rolls and lightweight Coir Logs can be manually installed, often removing the need for machinery in sensitive ecological habitats.

Installation of Coir Rolls and Pallets

6 months later

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COIR ROLLS

Unplanted and pre-established Coir Rolls

SPECIFICATION

Net Specification

Net Material:

UV stabilised polypropylene multi filament net

2.5mm diameter with a minimum tensile strength of 0.84kN

Roll end closed by stitching with a 3mm diameter multi filament braided UV stabilised polypropylene yarn

Breaking strength of individual yarn no less than 102kg

Net Opening:

50mm, diamond mesh pattern

Stuffing

Virgin coir mattress fibre:

Machine filled to maintain constant density of coir fibre

FIbres >50mm length, typically 100mm to 150mm

Compressed density:

8kg/metre (based on 300mm diameter Coir Roll)

Will not compress more that 15% when an 80kg weight (average man) is applied

Standard Roll Sizes

3m long by 0.2m diameter

3m long by 0.3m diameter

We can manufacture a variety of lengths to suit site conditions.

Coir Rolls are manufactured in the UK using virgin mattress type coir fibre.

Pre-established Coir Rolls

- Coir Rolls are established at our specialist UK nursery with a proven track record of growing high quality coir products
- Coir Rolls are planted at a rate of 10 plants per metre and grown outdoors in wet beds to create a hardy plant
- Minimum growing period is 6 months during the growing season (March – September)
- Roots of plants are grown through the bottom and sides of the Coir Roll to ensure correct maturity of vegetation
- All plants within Coir Rolls are grown to Flora Locale code of conduct for UK native plant growers

Contact us for correct species choice at specification stage

Pre-established Coir Rolls on a Water Vole habitat creation scheme

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COIR ROLLS

Installation Guide

Key Delivery Notes

- As standard will arrive palletised on a curtain sided articulated lorry.
- Suitable mechanical plant is required for offloading.
- Pre-established Coir Rolls vary in weight depending on maturity of vegetation and moisture content.

Measurements

	Size	Weight
Unplanted	0.2m x 3m	15kg
Unplanted	0.3m x 3m	21kg
Planted	0.2m x 3m	37kg
Planted	0.3m x 3m	52kg

Delivery and Unloading Instructions

Unloading & Storage

All Coir Rolls should be unloaded and laid out within 24 hours of delivery and kept wet at all times. In hot weather Coir Rolls should be regularly watered.

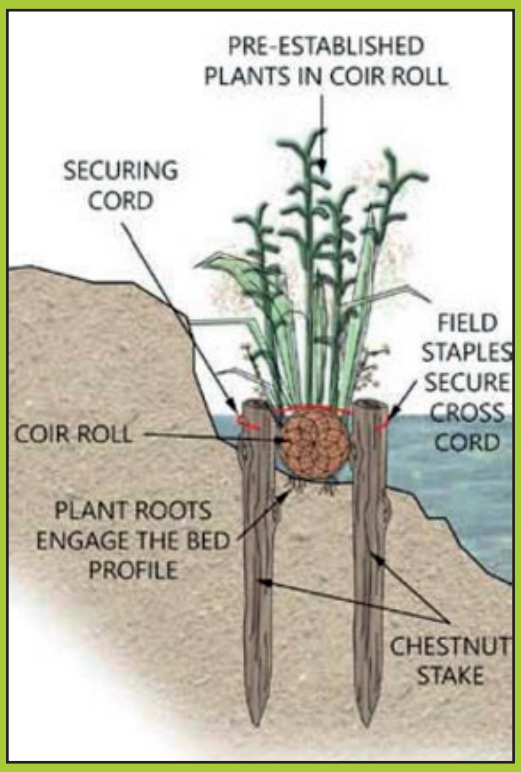
Ground Preparation and Water Levels

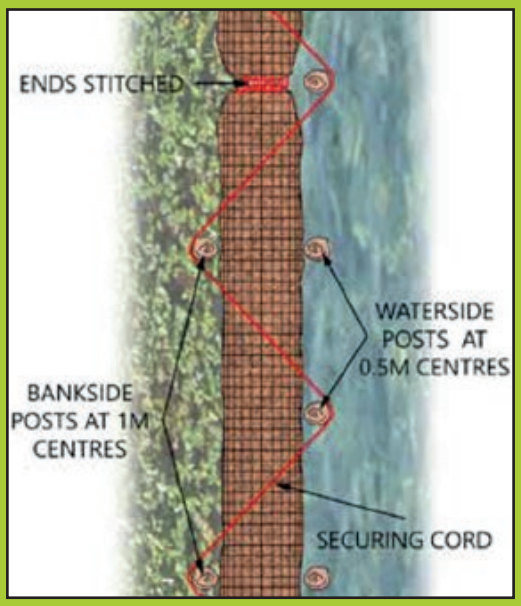
Prepare bed and bank so that top of the roll sits 25% above the average summer water level.

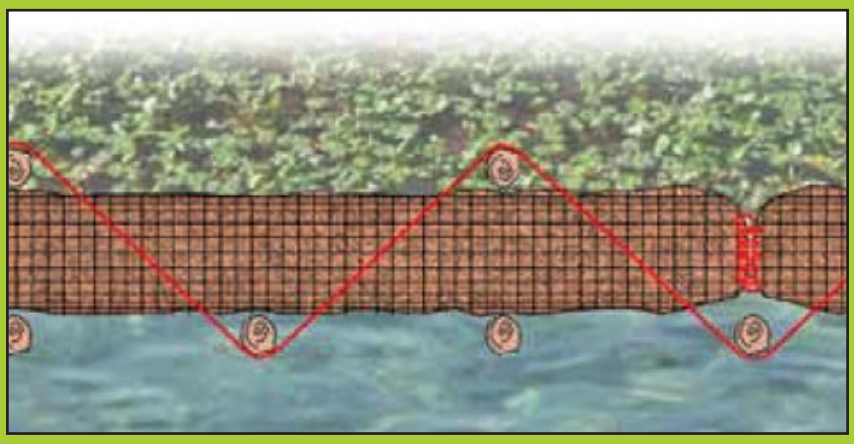
In order to get the Coir Roll to sit at the correct level a bed trench may be dug or alternatively the Coir Roll can be raised by placing it on a faggot/fascine or Rock Roll.

In higher energy situations a Rock Roll may be required in front to protect the Coir Roll.

Installation Instructions







1. Drive in the stakes at 0.5m centres at the front and 1m centres at the back.
2. Lift coir roll into position.
3. Lace ends together using 3mm fixing twine.
4. Hold the roll down by criss-crossing fixing twine between posts. Fix twine to the post with a fencing staple.
5. Backfill with suitable fill and consolidate or as specified.
6. Wildfowl/livestock fencing should be considered where there is a risk of grazing or trampling during the initial vegetation establishment period.

   Fencing should be appropriately designed to account for any water flow, with mesh aperture that is specific to the type of waterfowl (or livestock) that is being excluded and any other site specific pressures/impacts.

Please note these are generic installation guides, if you have site specific issues please contact us directly.

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COIR ROLLS

PLANT SPECIES SELECTION

Standard Mix

- Carex acutiformis (Lesser Pond Sedge)
- Carex flacca (Blue Sedge)
- Iris pseudacorus (Yellow Flag Iris)
- Juncus effusus (Soft Rush)
- Lythrum salicaria (Purple Loosestrife)
- Phalaris arundinacea (Reed Canary Grass)
- *Available with or without Glyceria maxima (Sweet Reed Grass)*

Monocultures

We grow a variety of monoculture rolls for specific sites including:

- Phragmites australis (Common Reed)
- Schoenoplectus lacustris (Common Club Rush)

Many other species may be available in stock and if not they can be contract grown to order.

Water Vole Mix

- Carex acutiformis (Lesser Pond Sedge)
- Carex pseudocyperus (Cyperus Sedge)
- Glyceria maxima (Sweet Reed Grass)
- Iris pseudacorus (Yellow Flag Iris)
- Lythrum salicaria (Purple Loosestrife)
- Mentha aquatica (Water Mint)
- Phalaris arundinacea (Reed Canary Grass)
- Schoenoplectus lacustris (Common Club Rush)

Bionet C125BN and Coir Rolls newly installed

Shows growth in 6 months


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