

Low-input naturalistic ecological restoration

CRANTON COLLIERY

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BACKGROUND

- Cronton Colliery closed in 1984
- Partial restoration in 1997
- New Masterplan agreed in 2006
- The Land Trust as client
- Key aim to encourage a community-led, ecologically-informed approach to site restoration, development and management
- Cronton as an exemplar

STARTING POINT -SLOW COLONIZATION



Southern plateau 1998



Southern plateau 2006

CRANTON COLLIERY

THE OPPORTUNITY

- 2006 Masterplan agreed for informal country park
- LRT identified as lead body to:
 - Take ownership of site from NWDA
 - Progress final restoration and open site to public
 - Manage the site through the Forestry Commission
- Funding available through:
 - National Coalfields Programme
 - WRAP Brownfield trailblazer programme

CRONTON GREEN COMPOST TRIALS

- THE RATIONALE

- To develop an ecologically-informed approach to the restoration of plateau areas in order to:
 - Maximise biodiversity benefits
 - Create an attractive landscape
 - Reduce unnecessary capital and future maintenance costs
 - Maximise the use of recycled materials
 - Demonstrate the use of green compost to inform the restoration of Cronton and other former colliery sites

BROAD AIMS

- to retain semi-natural character
- to use PAS 100 green compost incorporated into the spoil to ameliorate chemical and physical properties sufficiently to establish permanent wildflower vegetation
- to add sufficient green compost to allow only the establishment of indigenous and sown plants but not vigorous weedy competitors

INITIAL SOIL CONDITIONS

- **Baseline soil chemical analysis**
 - **Spoil acidity: low or very low pH (pH 2.7-3.2)**
 - **Major nutrients: low phosphorus, nitrogen and potassium**
 - **Higher potassium within patches of established vegetation**
 - **Organic matter: generally low**

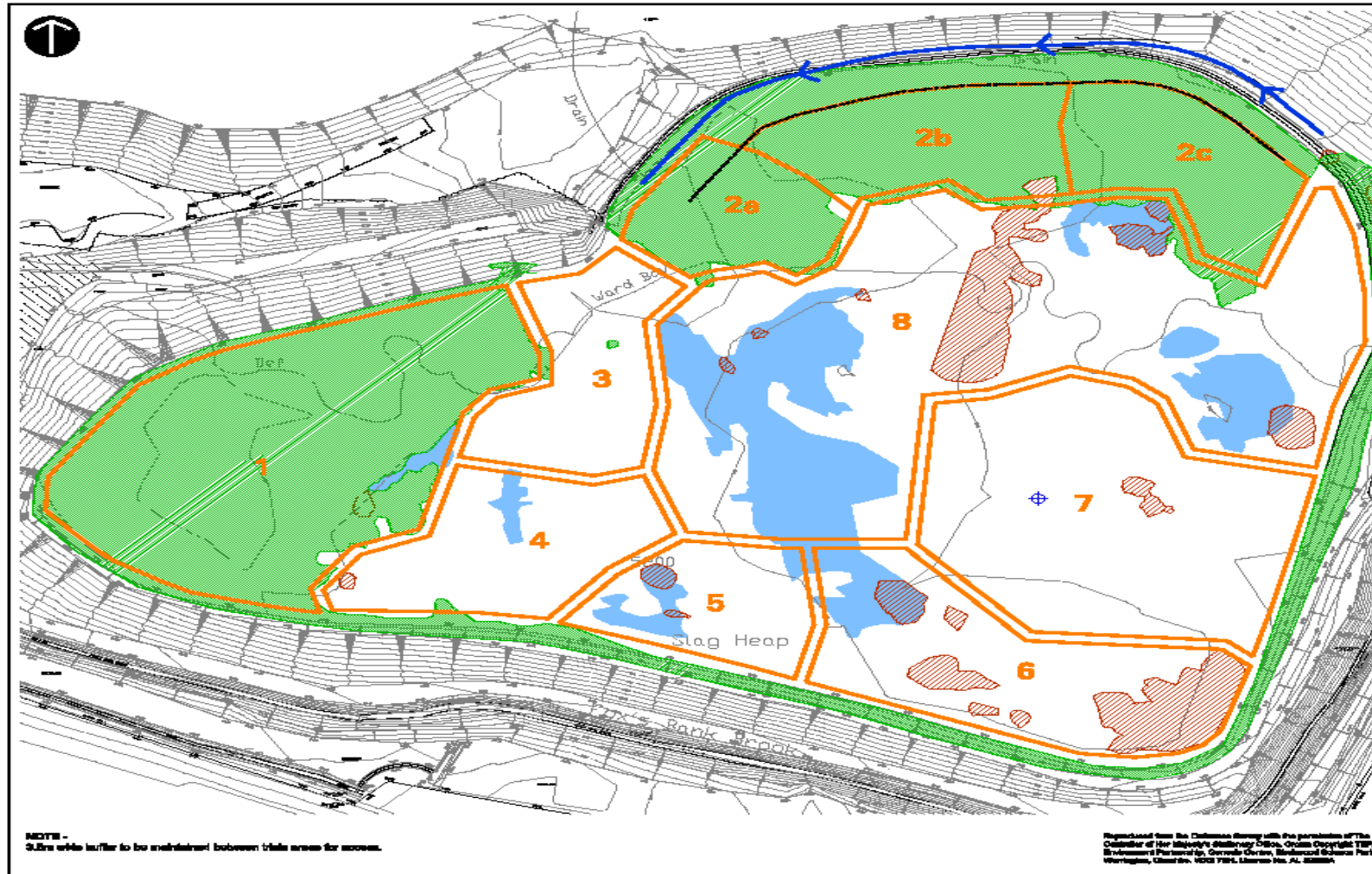
DESIGN OF THE TRIAL

LOW IMPACT TREATMENTS USING GREEN COMPOST

1. Establishing grassland left for comparison
2. Establishing grassland top-dressed with 10mm green compost
3. Scarified to 50mm and seeded with acid grassland mix
4. Cultivated to 120mm and seeded with acid grassland mix
5. Scarified to 50mm and seeded with acid wetland mix
6. Cultivated to 120 mm and seeded with acid wetland mix
7. Cultivated to 120 mm, 30mm layer of green compost incorporated, seeded with acid grassland mix
8. Cultivated to 120mm, 30mm layer of green compost incorporated, seeded with acid wetland mix

DESIGN OF THE TRIAL

LOCATION OF TREATMENTS

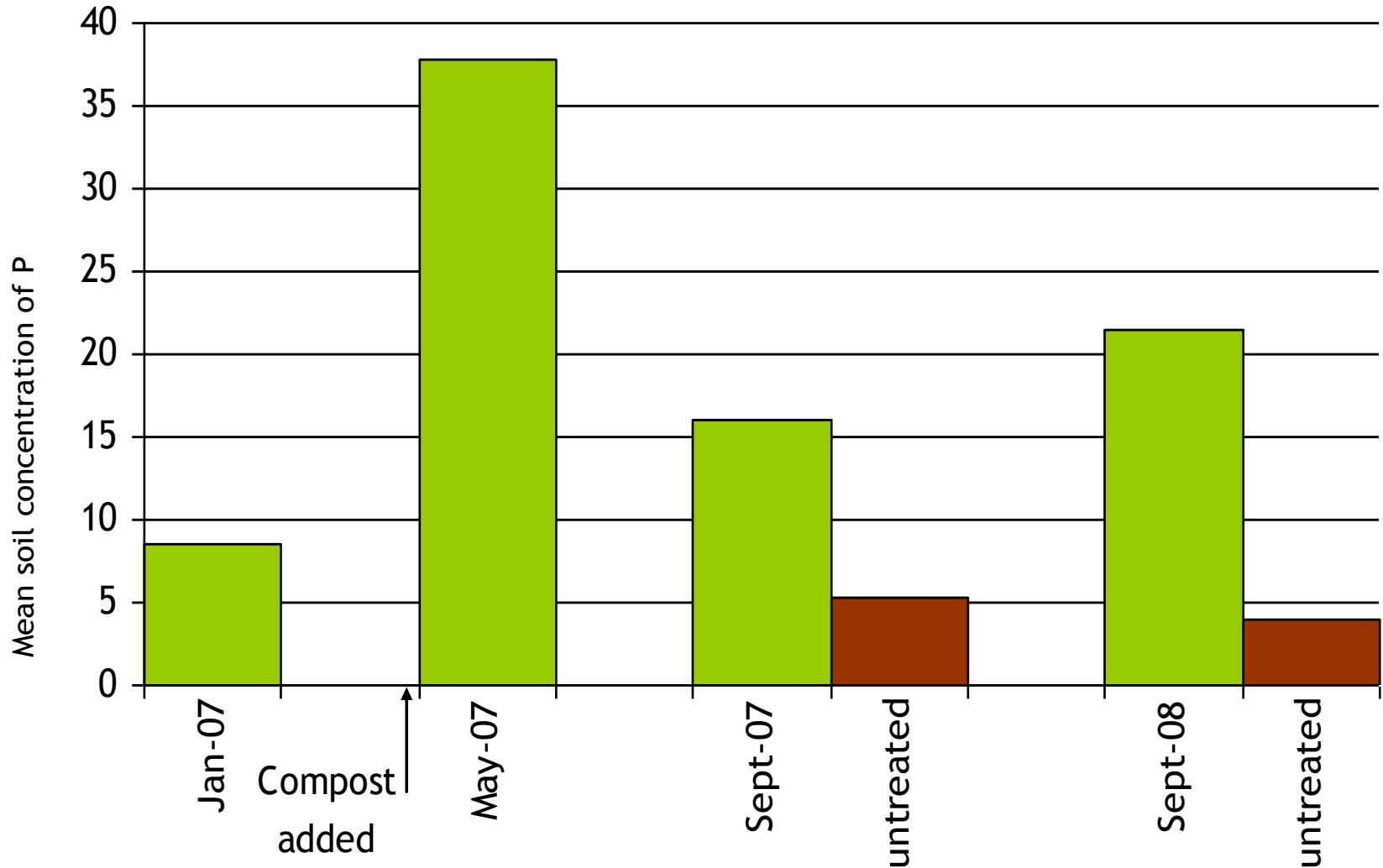


SPREADING COMPOST

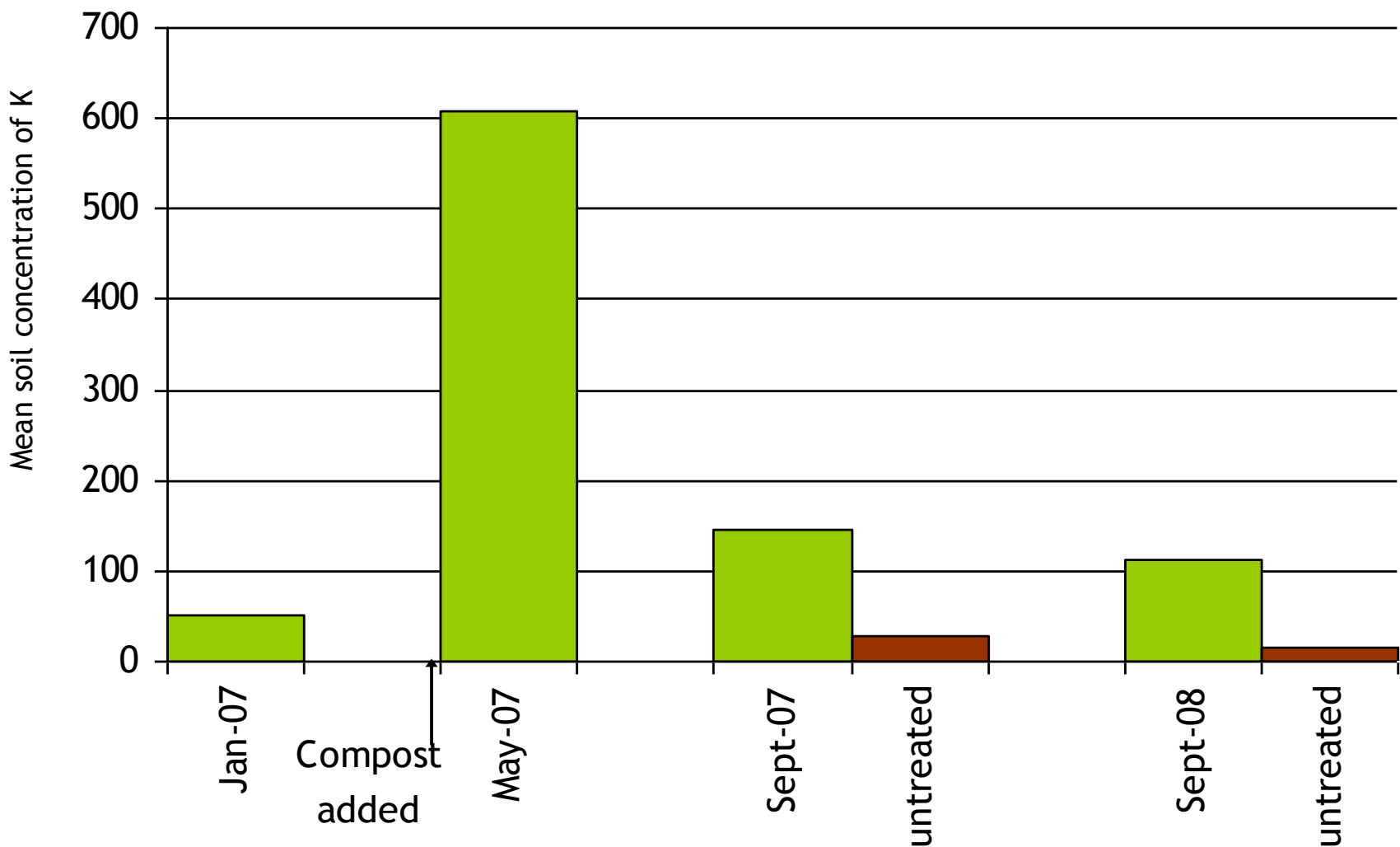
MAY 2007



PHOSPHORUS CONCENTRATION IN COMPOST AREA 7 VERSUS CONTROL

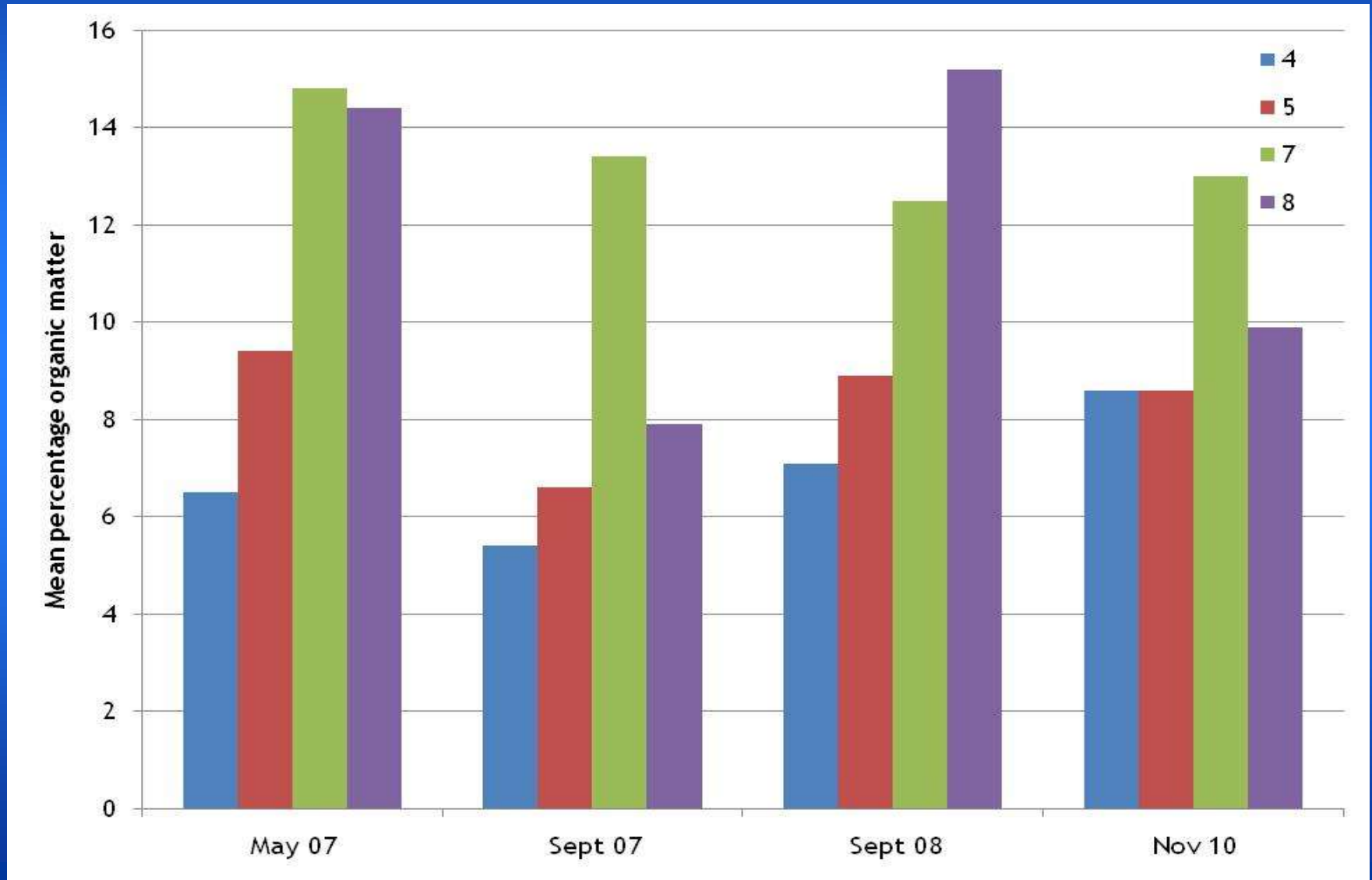


POTASSIUM CONCENTRATION IN COMPOST AREA 7 VERSUS CONTROL



PERCENTAGE ORGANIC MATTER

May 2007 to November 2010 in trial areas 4, 5, 7 and 8



VEGETATION DEVELOPMENT IMMEDIATE IMPACT



IMPACT OF COMPOST TREATMENTS

INCORPORATED IN TOP 120CM VERSUS NONE



SUSTAINABLE VEGETATION LONG-TERM (trial area 7 plus compost)



OCTOBER 2010

**Development of extensive reed beds and
colonisation by silver birch and alder**



CONCLUSIONS 1

- The ecologically-informed approach to the restoration of plateau areas at Cronton Colliery has;
 - Maximised biodiversity benefits
 - Created an attractive landscape
 - Reduced unnecessary capital and future maintenance costs
 - Maximised the use of recycled materials
 - Demonstrated the use of PAS 100 green compost to inform the restoration of Cronton and other similar former colliery sites

CONCLUSIONS 2

- Plan ahead and allow time for solutions to evolve
- Understand the site; the soils, the hydrology and ecology
- Undertake appropriate consultation; identify future uses
- Clarify the resources available for future management
- Be clear about your objectives / set a clear brief
- Ensure that you have the right areas of expertise and that consultants are managed
- Get the specification right and ensure that it is applied

FURTHER INFORMATION AVAILABLE FROM

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