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The Biomass Connect Newsletter

Issue 5
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IN THIS ISSUE

Welcome

Biomass Connect at LCA

Focus on Innovation - AWBD

Webinars

BioWILL Project

Demonstrator Hubs
Round Ups

Focus on Innovation -
OMENZ

Dates for your Diary

Field Reports



WELCOME

Welcome to the fifth edition of the Biomass Connect newsletter. There is so much going on in the Biomass World and reading this newsletter is the best way to stay Connected!

In this edition, you can find out about some recent bird surveys carried out on willow and Miscanthus plots in Devon and Somerset. There's a report to read and some videos to watch. If you're in the mood for watching videos, why not catch up on our webinar box set – details of how to access all 8 recordings are below. In addition, there are some interesting video explainers from the BioWILL project that looked at producing pharmaceuticals and bio packaging from willow.

GET IN TOUCH

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BIOMASS CONNECT AT LCA

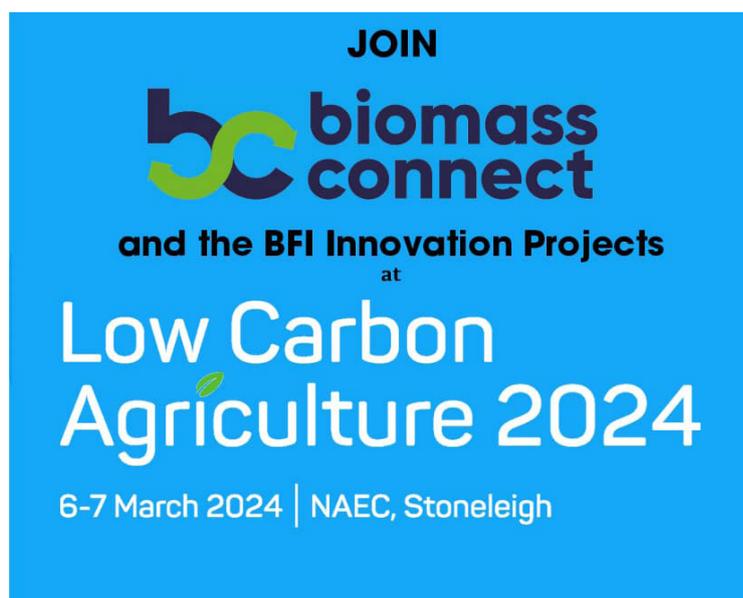
NAEC, Stoneleigh | 6-7 March 2024

Biomass Connect and a number of the [Innovation Projects](#) will be presenting at the Low Carbon Agriculture Show on 6-7th March. We'll have a busy Biomass Connect stand at the show and will also be hosting the Innovation Projects as part of a Biomass Feedstocks Innovation gathering.

The Low Carbon Agriculture exhibition and conference is a vibrant business event for forward-thinking farmers, landowners and industry operators. The event will explore ways to address climate change through the generation of renewable energy, the implementation of low-carbon technology and best practices in both carbon and environmental land management.

The show includes four dynamic, content-led Expos, with leading technology and service suppliers accompanied by an energy storage theatre, innovations in farm technology and a cutting-edge conference and workshop programme, in which key industry figures will provide insight and practical guidance on achieving Net Zero and creating a profitable and sustainable future for agricultural and rural communities.

Biomass Connect is excited to be a part of the show once again in 2024. you keep this week free. It would be a crime to miss it!



WEBINARS

If you missed any of the previous webinars, they are available on demand from the [Biomass Connect video library](#). The full series is as follows:

1. Land preparation – starting off on the right foot
2. Emerging markets for biomass crops
3. Some interesting alternatives: Eucalyptus and Reed Canary Grass
4. The regs – How to play by the rules when planting and using biomass crops
5. Biomass crops and water management
6. Some interesting Alternatives 2: Black Locust and Energy Canes
7. Maximising biodiversity in your biomass crop plantation
8. Managing fuel storage and drying to best practice quality standards

In season 3 starting in November 2024, we will be focussing on the following:

1. Carbon – sequestration, insetting, markets and trading
2. Agroforestry and integration of biomass crops
3. Biomass crop harvesting methods
4. Next steps for the biomass crops industry

FOCUS ON INNOVATION

The Accelerating Willow Breeding and Deployment (AWBD) Project, spearheaded by Rothamsted Research and funded by the BFI Programme, is at the forefront of revolutionising the production of SRC willow for biomass.



Recognizing the potential of SRC willow as a fast-growing biomass feedstock, the project aims to diversify farm businesses and adapt to less favourable growing environments.

Despite SRC willow's capacity to produce up to 15-20 tonnes/ha annually on productive sites, current yields are generally lower, largely due to varieties being bred for optimal conditions, a challenge exacerbated by climate change.

The project's dual focus on breeding and deployment is set to overcome these limitations. By employing genomic selection the initiative seeks to accelerate the breeding process, enhancing traits such as yield and disease resistance through the analysis of genotype and phenotype data.

Concurrently, the deployment work involves planting and monitoring willow genotypes across five diverse UK environments to evaluate their performance under various stressors, including flood and drought tolerance, and disease resistance. With over 70,000 cuttings planted across these environments, the project has embarked on a comprehensive assessment of willow's adaptability and productivity.

By February 2024, the project had initiated the collation of data on rust resistance, yield potential, and early vigour, among other traits. This extensive data collection will inform the calculation of Genomic Estimated Breeding Values (GEBVs), guiding the breeding of new, resilient SRC willow varieties tailored to specific environments.

By March 2025, the AWBD Project aims to have produced its first GEBVs, marking a significant milestone in the development of SRC willow varieties that promise to enhance the UK's biomass production capabilities.

This initiative not only underscores the critical role of genomics in agricultural innovation but also highlights the potential of SRC willow as a sustainable biomass resource, poised to contribute significantly to the UK's energy security and net-zero ambitions.

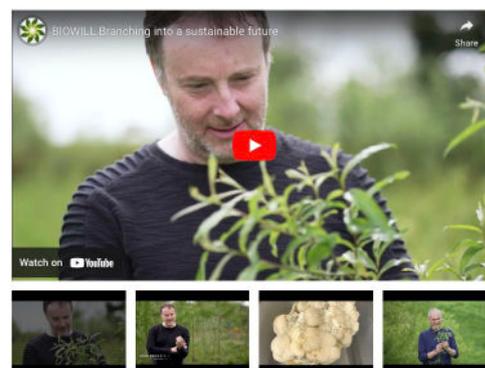
BIOWILL PROJECT - SOME RESOURCES

A European funded project called BioWILL came to a conclusion in 2024. It looked at the possibility of creating an integrated zero waste biorefinery using willow biomass. Humans have utilised the multifunctionality of the genus *Salix* for millennia, but this project focussed on the potential for utilising the versatility of willow on a commercial scale by producing pharmaceuticals (in particular extractives such as salicins) for skin creams, bio packaging for food containers, natural fertiliser and energy from methane production.

The BioWILL team have recently published a paper in the journal *Industrial Crops and Products*:

A review of Willow (*Salix* spp.) as an integrated biorefinery feedstock

As a neat way of rounding up the project, all the partners provided interviews for several informative YouTube clips. Watch them here: <https://www.biomassconnect.org/news/biowill-project-video-round-up/>



DEMONSTRATOR HUBS ROUND UP

The Biomass Connect Demonstrator Hubs are going from strength to strength. Last year we planted a quarter of a million plants across eight sites (four in England, two in Scotland and one each in Wales and Northern Ireland). This spring we are:

- Restocking where necessary.
- Adding grasses and herbaceous crops, including *Silphium* (also known as Cup Plant), Sida and Switchgrass.
- Adding more Poplar varieties from Italy for short rotation forestry trials.

We are also planning a series of demonstrator hub events in May and June. Stay peeled to our [What's On](#) pages for more details.

You can read more about our Demonstrator Hubs and see what's planted at your local site [here](#) and see videos [here](#).



COMING SOON – SOME THINGS TO WATCH OUT FOR

Case studies on:

- Using willow buffer strips to reduce water pollution in Northern Ireland.
- Eucalyptus for firewood production in Cornwall.
- Using Miscanthus bales in a self-build house in Wales.
- Using willow for fodder at Chester Zoo.
- Long-term yields from commercial willow plots in Nottinghamshire.

FOCUS ON INNOVATION

The OMENZ project, led by Terravesta and working in collaboration with Cranfield University, Crop Health and Protection (CHAP), Engene Seeds, Liverpool John Moore University, TJSS, University of Lincoln & Ystumtec, the project has an overarching mission to facilitate the faster, more efficient, and successful establishment of miscanthus in the UK.

Miscanthus, offers farm businesses a sustainable income on land less suitable for food crops, however the success of Miscanthus cultivation hinges on the effective establishment of the crop, a challenge that has previously hindered its widespread adoption.

Through the deployment of innovative agri-tech solutions and field monitoring technologies, OMENZ aims to streamline and enhance the establishment process, thereby facilitating the scale-up of Miscanthus cultivation. The project examined the entire Miscanthus establishment process, from nursery to grower, to identify barriers to success. Planting material production and the pre-treatment and handling of Miscanthus rhizomes were critical areas for improvement. It also identified land preparation and crop surveying as key elements – all significantly impacting the efficiency and quality of crop establishment.

Recent advancements include the development of AI technology by Cranfield University for monitoring Miscanthus growth using drones, which promises to revolutionise crop management through detailed in-field data analysis.

The project is now developing solutions using innovative agri-tech and field monitoring technologies, to overcome these barriers to scale up. It is prioritising deploying these innovations to the commercial sector to vastly improve miscanthus establishment.

Looking ahead, the OMENZ project plans to establish a dedicated trial site to further refine these innovations, with the goal of integrating establishment and harvest data through Terravesta's Harvest Hub platform.

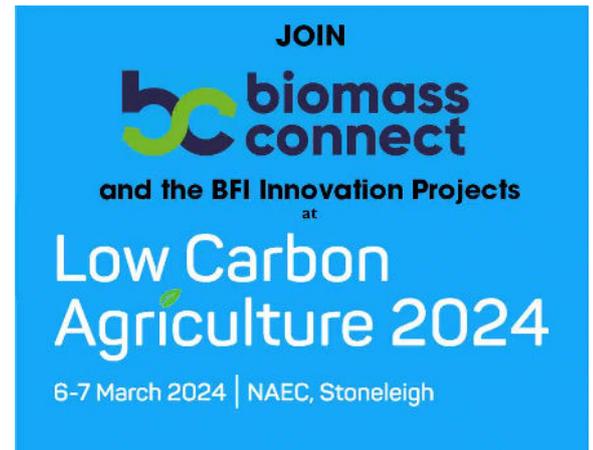
This integration aims to create a well-informed supply chain, supporting the project's mission to improve miscanthus establishment and contribute to the UK's net zero ambitions.



DATES FOR YOUR DIARY

6 March 2023 – Low Carbon Agriculture Show NAEC, Stoneleigh Warwickshire

Biomass Connect and a number of the Innovation Projects will be presenting at the Low Carbon Agriculture Show in 2024. We'll have a busy Biomass Connect stand at the show and will also be hosting the Innovation Projects as part of a Biomass Feedstocks Innovation gathering. We'd love to meet you there.



Biomass Connect Demo Events

We have a packed series of demo events planned once again in 2024. We'll have events all over the UK so there should be one near you.

- 16th May 2024 - NIAB Demonstrator Hub, Headley Hall, Yorkshire.
- 23rd May 2024 - Rothamsted Research Demonstrator Hub, North Wyke, Devon
- 6th June 2024 - SRUC Demonstrator Hub, Edinburgh, Scotland
- 18th & 19th June 2024 - AFBI Demonstrator Hub, Northern Ireland
- 12th September 2024 - BGI Demonstrator Hub, Chesham, Buckinghamshire
- Late September, date TBC - Myerscough College, Preston
- Late September, date TBC - Bishop Burton College, East Yorkshire
- Date TBC - Newcastle University Demonstrator Hub, Newcastle

Biomass Connect Final Event / Trade mission 7-8 November 2024 Warwick Conference Centre



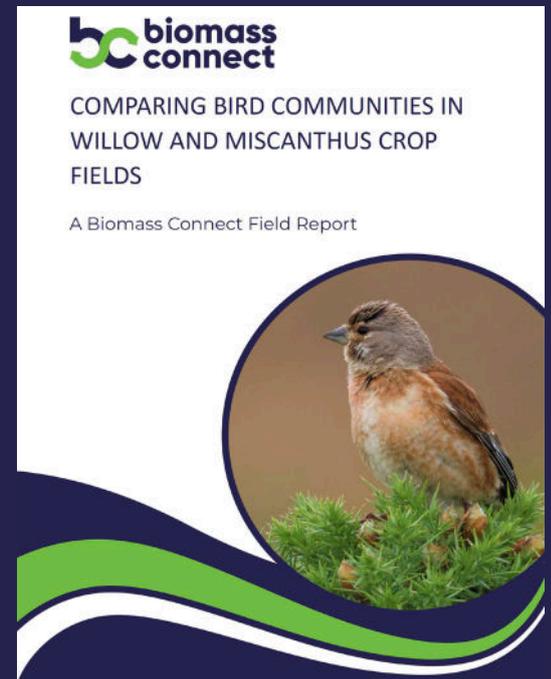
Warwick Conference Centre will become the epicentre of the biomass world next November when we present the Biomass Connect Showcase.

This event will enable all of the projects funded by the Biomass Feedstocks Innovation Programme to showcase their technological developments. The conference will take place on the 7-8 November. There will also be a chance to partake in trade mission visits to see innovations in action and visit a Biomass Connect Demonstrator Hub. It's all very early in the planning stages at the moment, but make sure you keep this week free. It would be a crime to miss it!

[Biomass Connect Events Calendar](#)

FIELD REPORTS

Comparing bird communities in willow and Miscanthus crop fields



We have produced two short films looking at birds in and around willow and Miscanthus crops in Devon and Somerset. The films feature ornithologist and wildlife detective Ed Drewitt and were filmed in mid-November with a dawn and dusk survey at each site.

A short report showing all the birds encountered at each site has also been produced.

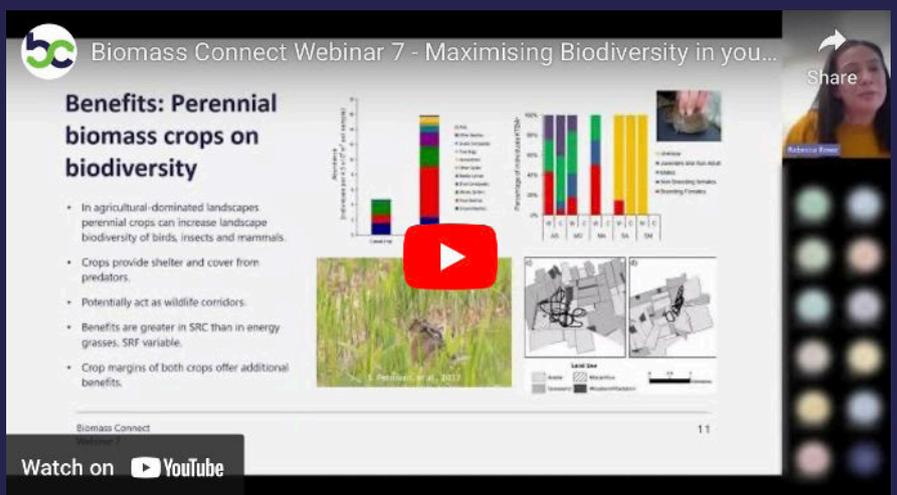
These resources indicate that the biomass crops are being used by a wide range of bird species both for feeding and roosting. The plan is to return to these sites in March and June 2024 to see what birds are using the crops at these times.

[Read Article](#)

In addition, you can hear more from Ed and Dr Rebecca Rowe in the recording of the webinar: *Maximising biodiversity in your Biomass crop plantation*.

This covers:

- Trends in biodiversity in UK farmland
- How plantations could be designed to increase biodiversity
- How biomass plantations could contribute to protecting endangered species
- Grants available to biomass crop growers for biodiversity enhancement.



[Watch Webinar 7](#)