bluefield

# Nature

## Bluefield Solar Income Fund (BSIF)

# Why is nature relevant to renewable energy?

By their nature, wind and solar technologies are connected with the natural world, both through the power they harness from natural processes such as the sun's irradiation and the wind, but also the land they occupy for multiple decades. The Bluefield Solar Income Fund (BSIF) recognises the synergies between nature and climate change and delivers renewable energy whilst having regard for the natural environment, working to protect and, where possible, enhance nature across its portfolio.

The construction and operation of renewable infrastructure assets can impact the local environment, for example through land use change or disturbance to habitats and species[1]. Working with its key service providers, BSIF endeavours to minimise its negative impacts where possible, and the collection of asset-level environmental data supports BSIF in monitoring any adverse environmental impacts over time. Through this engagement, BSIF also intends to identify opportunities to enhance biodiversity at its assets and, where appropriate, implement nature-based solutions that have the potential to support climate resilience as well as achieve wider co-benefits for local communities.

BSIF acknowledges that an integrated approach, involving collaborative efforts between stakeholders to monitor, assess and manage nature considerations at each stage of the investment lifecycle, is key to making informed decisions regarding both trade-offs and positive outcomes for nature, and ultimately support the delivery of long-term value.

# Assessing and enhancing nature

Building an ecological baseline is an essential part of making informed decisions around nature, to enable land management practices and enhancement initiatives to be designed which complement the local ecosystem. By leveraging a data-driven approach, adverse impacts can be recognised and managed, whilst the benefits of any positive changes can be quantified and evidenced.

This approach aligns with regulations and frameworks such as the SFDR's PAI reporting regime[2] and the Taskforce on Nature-related Financial Disclosures (TNFD)[3], which advocate for increased transparency and reporting in relation to nature-related impacts, opportunities, dependencies and risks. It is important to note that creating positive ecological change is a gradual process requiring sustained monitoring and dedication; the long-term nature of BSIFs investment strategy creates a supportive environment to help achieve this.

Bluefield Operations, BSIF's primary Operation & Maintenance (O&M) provider, have led assessments to gain a better understanding of the species present across the solar portfolio. This has included the calculation of biodiversity net gain and ecological assessments aligned to Solar Energy UK's guidance for monitoring biodiversity on solar farms[4].

These assessments provide an indication of the current biodiversity on the site, helping inform decisions relating to the land management approach, whilst also identifying enhancement opportunities. It is important to note that nature enhancement efforts are highly dependent on the specific ecological characteristics of each location, and not every site is suitable for such initiatives.

# Land use and management

The renewable energy and agricultural sectors together play an important, complementary, role in achieving a more sustainable future. As with all infrastructure assets, renewable energy relies on the availability of suitable land. Whilst proximity to grid connection is crucial, planning policy requires developers to take account of other important elements, including potential environmental impacts and competing land uses. The new government has clearly stated that large-scale solar is both crucial to achieving the UK's national energy security and decarbonisation ambition, whilst also being complementary to maintaining a resilient food system[5].

More broadly, the UK's latest Climate Risk Independent Assessment (CCRA3) highlighted that climate change already poses a risk to UK food production, and this risk will grow substantially over the next 30 to 60 years[6]. Renewable infrastructure, through its contribution to climate change mitigation, may in turn help reduce future losses to productive farmland. At the same time, some solar farms have the capability to coexist with agricultural activities, such as sheep grazing, enabling the land to be managed in a way that satisfies both agricultural and energy needs, and provides farmers with an opportunity to diversify their income[7].

BSIF recognises the importance of responsible land use and, working with its development partners, aims to avoid best and most versatile land where possible. During planning, environmental assessments are undertaken to assess and help minimise negative impacts to the surrounding environment. The results of these assessments inform the development of a landscape and ecological management plan (LEMP) or biodiversity management plan (BMP), which prescribes the ongoing management of the land across the operational phase of the asset lifecycle.

During recent years, BSIF has engaged Bluefield Operations to trial initiatives that enhance land management practices with the aim of better supporting nature. For example, conservation grazing has been introduced at Willows solar farm. Enhanced monitoring is also being conducted across selected sites to assess the impact of actions taken to support nature; most recently, this has included bird population surveys and trailing new innovative technologies to identify key species.

# Case study: Conservation grazing at Willows Solar Farm

Conservation grazing is a land management technique which uses livestock to manage vegetation whilst aiming to retain habitats that are suitable for a wide range of wildlife[8]. Willows solar farm is a 7-hectare farm located in Staffordshire, comprising agricultural grasses that were originally managed through traditional sheep grazing. Bluefield Operations identified an opportunity to support biodiversity on site by planting a wildflower meadow and introducing a sustainable grazing regime.

To achieve the latter, the site has been divided into two areas using stock fencing, allowing sheep to be confined to the northern section of the site during spring and summer, so that the wildflower can flourish. The sheep will be free to graze across the entire site at the end of summer, optimising its dual use. The careful timing and management of grazing encourages both nature and livestock to prosper together throughout the year.

# Case study: Encouraging pollinators at Romsey Solar Farm

Pollination is a critical ecosystem service[9], from both the perspective of agricultural productivity and biodiversity[10]. 75% of crop species, 35% of global crop production, and up to 88% of flowering plant species are dependent on insect pollinators to some extent[11].

At Romsey Solar Farm, a 9.4-hectare site in Hampshire, an additional 3000m² area of wildflower was sown by hand in spring 2024. With a mix of 14 native wildflower species, it is hoped the area will support a large range of pollinators, birds and mammals onsite. In addition, in the long-term, wildflower meadows have the potential to provide a range of ecosystem services such as habitat connectivity, carbon sequestration, improved soil structure, and can provide natural flood control[12].

A traditional low-intervention management regime is being followed to encourage natural meadow development. The wildflowers are left to set seed through the summer, followed by a late summer hay cut and removal of arisings. This approach reduces soil nutrient levels and aligns with best practices for wildflower establishment[13].

Ecological monitoring conducted in summer 2025 assessed botany, pollinators, and breeding birds present at the solar farm. Early findings show promising progress, with wildflower species making up approximately 67% of vegetation cover in surveyed plots; an encouraging indicator of biodiversity establishment within the newly planted area.

Further monitoring is being considered to track biodiversity over time and to understand how well the area supports local insect species, delivering gains for nature alongside the renewable energy project.

# Case Study: Leveraging technology in ecological monitoring

Ecological monitoring plays a critical role in assessing the condition of natural environments.

This process enables the measurement of key environmental indicators, supports the identification of notable or at-risk species, and informs data-driven land management strategies that can contribute positively to biodiversity and ecosystem health[14].

Traditionally, ecological monitoring has relied on field specialists conducting physical, on-site surveys.

These visits typically involve assessments across various ecological parameters, including botany, breeding bird populations, soil composition, and invertebrate diversity. While this approach provides valuable insight, it represents only a snapshot in time. As a result, the data collected can be subject to variability influenced by weather, seasonality, or other environmental factors, potentially under- or over-representing certain characteristics.

Between June 24 – June 25, BSIF trialled a number of innovative technologies designed to help enhance the accuracy, consistency and availability of ecological data. These solutions included:

- AI-enabled acoustic sensors capable of identifying bird species through their calls over extended periods;
- Monitoring devices that detect the presence and diversity of bee populations;
- The use of drone surveillance to assess grassland habitat conditions, reducing the need for frequent in-person visits.


**Above:** One of the technologies trialled was the 'Polly', an in-field sensor device designed for automated insect monitoring using advanced bioacoustic algorithms to identify passing pollinators.

The success of these novel monitoring techniques is being assessed and will inform BSIF's future ecological monitoring strategy.

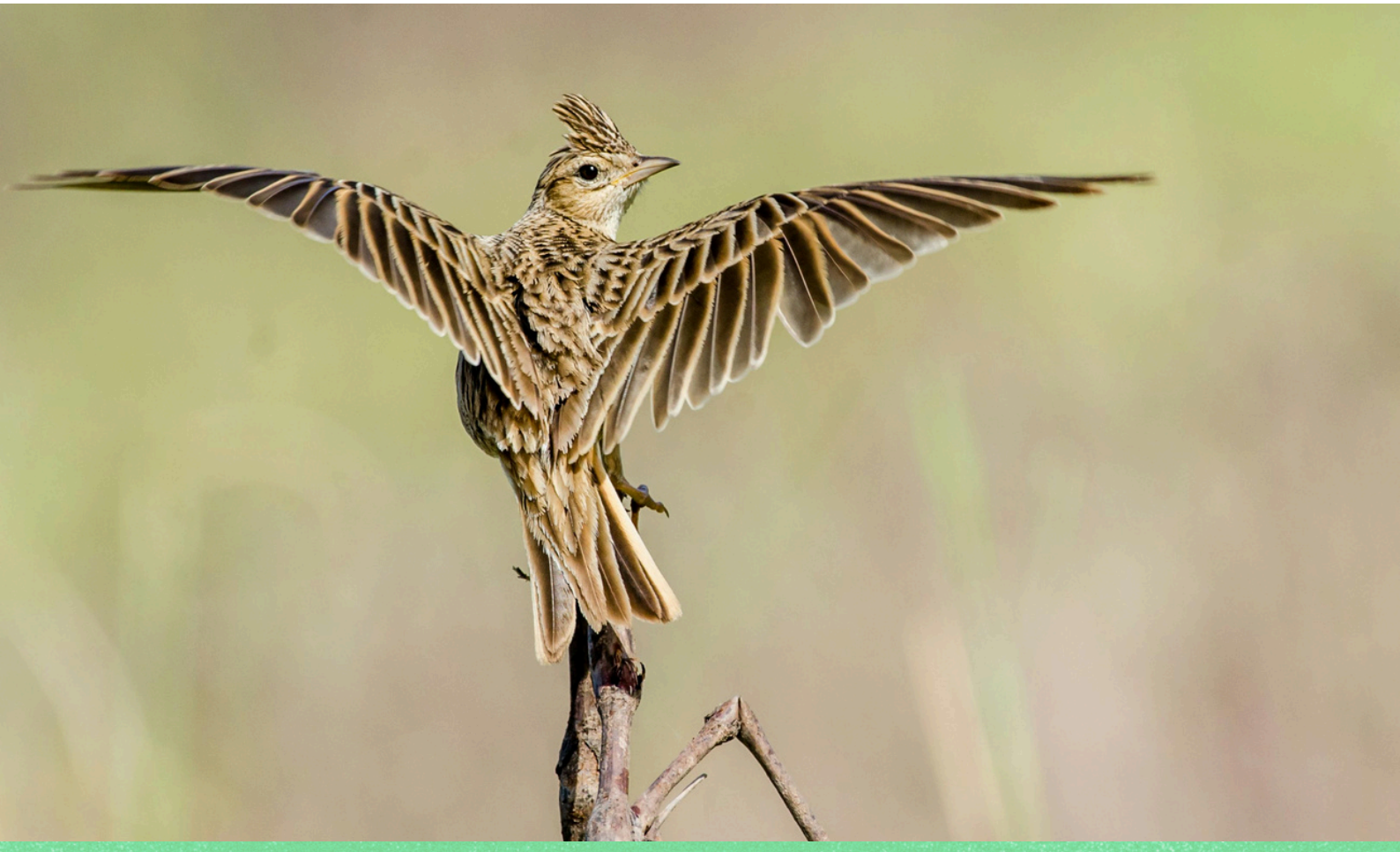
Scalable, technology-driven solutions such as these represent a significant step forward in efforts to improve the quality, frequency, and commercial viability of ecological data collection, supporting both environmental and long-term investment value[15].

# Case study: Informing land management through farmland bird surveys at Stow Longa

An ecological assessment in 2022 identified significant numbers of farmland birds at Stow Longa solar farm, a 5.3MW site spread across approximately 13 hectares in Cambridgeshire. Surrounded by expansive cropland, the site is delineated by a combination of new and existing hedgerows, which provide habitats for a variety of farmland birds. In 2023, BSIF commissioned additional assessments to establish how key bird species were using the solar site: either for breeding, foraging or passively. The species surveyed included Skylarks, Linnets, Yellowhammer and Corn Bunting, along with other farmland birds with Amber or Red Birds of Conservation Concern status. The assessments were undertaken by a student researcher and ecological consultant Wychwood Biodiversity. A range of methodologies were used to gather data, such as nest searching with a thermal camera, breeding bird territory mapping and focal watches[16].

As a result of these assessments, changes in land management practices were recommended and subsequently implemented in 2024. For instance, a partial cut of vegetation was conducted on the site to manage growth and prevent shading, whilst leaving enough habitat intact to support ground-nesting birds and other wildlife. A hibernaculum was installed to help provide more varied and additional habitat for invertebrates, which in turn is hoped to help support birds visiting the site by providing an increased food source.

Looking ahead, ongoing bird monitoring is helping to assess whether the land management changes are having a positive impact. Four surveys were carried out between April and June 2025, which recorded several red-listed bird species using the site, including linnet, yellowhammer, skylark, and, notably, corn bunting – identified for the first time since 2022[17]. These results contribute to a growing dataset that will help guide future management of the site to better support local wildlife, recognising that longer-term data is needed before firm conclusions can be drawn.



# Case study: West Raynham Solar Farm becomes the first site in the UK to receive Wild Power® Gold certification

In May 2024, West Raynham Solar Farm, a 50MW solar farm in Norfolk, was awarded inaugural gold certification from Wild Power®[18]. Wild Power® is an independent certifier providing tools and processes to help developers and operators measure, manage, monitor and report on their biodiversity efforts. A number of site-based improvements were identified and implemented between 2022-2024, resulting in West Raynham Solar Farm becoming the first site in the UK to receive Wild Power® gold certification.

Biodiversity and land management specialists from Bluefield Operations and Wychwood Biodiversity conducted an ecological survey which identified appropriate management improvements for the site. The existing measures and new additional features contributed to the site achieving its Wild Power® gold certification. The site already hosted approximately 40 acres of wildflower meadow with conservation grazing[19], and five acres of young tree plantings. Enhancement work included increasing ecological data monitoring and availability, conducting an ecosystem services assessment, and installing additional microhabitats for protected species including birds, reptiles, and a maternity bat roost box.

Joe Arafa, Director Wild Power® said: “We are delighted to have issued the UK’s first Wild Power® certification to Bluefield’s West Raynham Solar Farm. We commend Bluefield for their work to enhance the biodiversity measures at the site and congratulate them for achieving Wild Power’s gold standard at West Raynham.”

# Citations & References


1 Solar Energy UK Habitat Report 2023

2 The SFDR’s Principal Adverse Impacts (PAI) regime requires disclosure of how investments may negatively affect environmental factors, including biodiversity.

3 Taskforce on Nature-related Financial Disclosures

4 Solar Energy UK Guidance: A Standardised Approach to Monitoring Biodiversity on Solar Farms

5 GOV.UK: Solar projects must fit in with food security

6 GOV.UK: United Kingdom Food Security Report 2021: Theme 2: UK Food Supply Sources

7 Solar Energy UK: Farming sustainably: How solar energy is saving

8 GOV.UK: Graze with livestock to maintain and improve habitats

9 Pollination supports food production and biodiversity by helping plants reproduce making it a vital natural service for healthy ecosystems.

10 Pollinator Diversity: Distribution, Ecological Function, and Conservation 2017

11 Nature Communications: Widespread losses of pollinating insects in Britain

12 Realising co-benefits for natural capital and ecosystem services from solar parks: A co-developed, evidence-based approach

13 Royal Horticultural Society: Wildflower Meadow Maintenance

14 Solar Energy UK: Ecological Monitoring Guidance 2022

15 Veritree: Bioacoustics: Innovative Biodiversity Monitoring

16 Focal watches are a monitoring technique involving observation of individual birds for specific periods of time to record behaviour that may indicate nest locations.

17 Findings are based on a limited number of ecological surveys carried out over a short timeframe, offering a snapshot rather than a full picture of bird activity across the year.

18 WildPower

19 Conservation grazing is a regime where livestock are removed between April and July or where the grassland is grazed at a low intensity to leave a varied and tall sward with flowering plants present.

bluefield

# Contact

For further information:

**Email:** info@bluefieldllp.com

**Phone:** +44 (0) 7562616567

**Address:** 6 New Street Square London, EC4A 3BF