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Wildland Gardens for the Stoke-on-Trent Region

Developing Resilient, Bountiful Conservation Properties

A mass restoration of ecosystems offers us hope where there was little hope before.
George Monbiot

Summary

Vertis Environmental Finance, in conjunction with Eco-Asset Solutions & Innovations LLC, have formed a UK-approved Community Interest Corporation (CIC) for the purpose of designing and constructing two eco-restoration developments in the Stoke-on-Trent / Staffordshire region of the United Kingdom.

Community leaders in the UK Moorlands have expressed interest in recovering ecosystem services lost as a result of extensive mining and manufacturing underway for the past two hundred years. Stoke-on-Trent leaders have identified specific opportunities to improve local quality of life by:

1) Constructing a woodway (aka, a greenway or biodiversity corridor) between Knypersley Reservoir (Staffordshire) and the Whitfield Valley Nature Preserve (Stoke-on-Trent), and

2) 'Rewilding' or establishing a fully functional ecological reserve at a nearby industrial brownfield to be connected with the woodway. The CIC herein recommends the remnant Chatterley Whitfield Colliery adjacent to the Whitfield Valley Nature Preserve near the township's north-central border.

Figure 1. Creation of a Head of Trent Woodway and a Chatterley Whitfield Conservation Bank could dramatically increase ecosystem service values in the UK Moorlands District.

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These two ecosystem service rehabilitation projects are given preliminary names here (for reference only), the *Head of Trent Woodway* and the *Chatterley Whitfield Conservation Bank*. Figure 1 provides an early illustration of potential project boundaries in relation to the current Whitfield Valley Nature Reserve. The Woodway would be approximately 3.3 km long, linking Knypersley Reservoir with the proposed ~ 120 acre Conservation Bank. The Conservation Bank would join the ~ 60 acre Nature Reserve, for a total of about 180 acres dedicated to a full range of productive ecosystem services.

The Vertis-EASI CIC offers a unique approach to ecological restoration undertakings – a '*wild permaculture*' strategy employing both rewilding and permaculture principles dedicated to landscape-scale restoration.

These projects may be funded at least in part by private sector interests, based on opportunities to earn Social Investment Tax Credits (SITCs) in measure with investors' level of support. They will draw the attention of regional health care and insurance company interests, since outcomes are tied to long term recreational, nutritional and psychological quality of life improvements. These forms of preventative health care will in turn reduce the cost of both insurance policies and health care treatments.

Background

Residents have been keen to discover the combined value of upgrading degraded or underutilized properties while also restoring native biodiversity supporting local ecosystems and economies.

Through **rewildin**g – fully functional eco-restoration of original landscapes – there will be opportunities to reverse regional loss of ecosystem services that are fundamental to quality of life. Rewilding implements strategies that help nature find its own balance again – allowing parts of the landscape to be *untamed* (rewilded) so that nature can over time reestablish sustainable, resilient processes cohesive with the local environment. Rewilding is about allowing ecosystems to once again become self-perpetuating, abundant and diverse. Rewilding commits to a future in which humans and nature are equal parts of a mutually beneficial partnership instead of living as separate, often antagonistic neighbors.

Rewilding coincides with the aims of **permaculture** – an integrative approach to sustainable living that emulates ecological relationships in wild nature. Permaculture employs proven methods to sustainably connect humans with the natural world where, among other things, they may gather perennial edibles, medicinals, wild fibers & dyes, or a seasonal array of native wildflowers – all derived from seven distinct layers of the forest garden: the canopy, the mid-story, shrubs, herbs, climbers, groundcover and roots (Figure 2). Productive, cultivated species are interplanted with high-value native species to optimize biodiversity of the restored, rewilded landscape. Ecological methods of water retention, soil building, biological pest control, nutrient recycling, even air filtration become central to the combined practice of **wild permaculture**. Together these disciplines offer a land use and community design concept based on harmonious, sustainable reintegration of human-and-nature.

These efforts also support the emerging **ecological economy,** a measurement-based, market-driven valuation of ecosystem services. For example, the emergence of compensatory mitigation credits designed to offset human-caused environmental impacts will integrate public-private conservation interests. Prices tied to future project biodiversity offsets, for example, will gradually inform ecological economists of the relative market value of related ecosystem services.

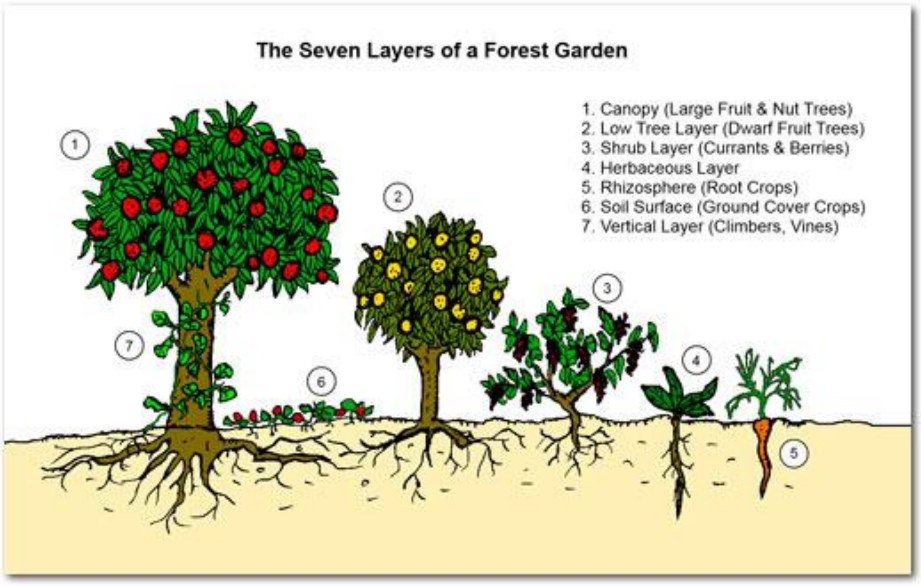


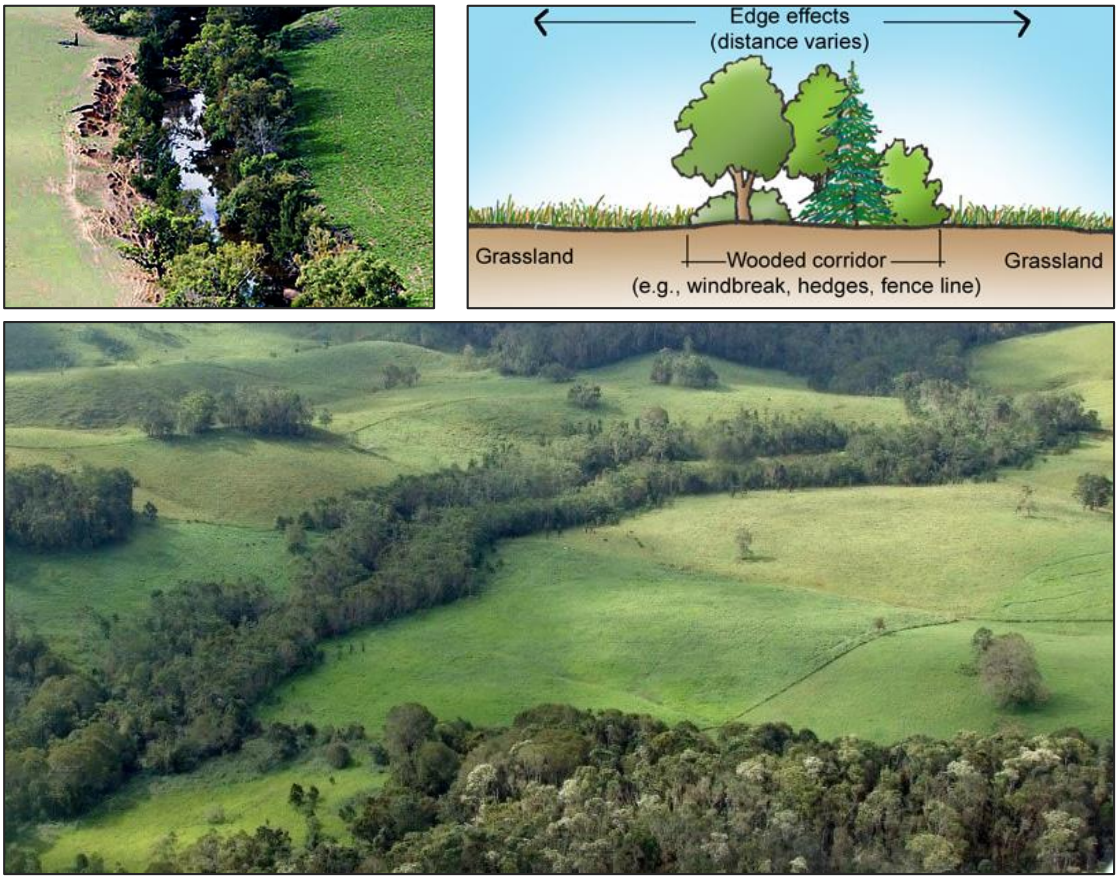
Figure 2. Permaculture's Seven-Layer System

A Landscape-Scale Woodland Garden for Stoke-on-Trent

A roughly 180-acre nature preserve and conservation project in northern Stoke-on-Trent may be presented in terms of a landscape-scale woodland garden as depicted in Figures 3-4 below. The Chatterley Whitfield Conservation Bank would be designed to provide core areas of untrammeled wild space as well as buffer areas of semi-wild acres accessible for hiking and non-consumptive harvest of edibles, fibers or other materials. For example, apples, pears and figs may be grown between the taller canopies of surrounding trees. Shade tolerant currants and berries can be established at the woodland edge. Field borders may be constructed with native warm-season grasses. Mint, recumbent rose or

wildflowers can provide excellent ground cover. Truffles can become part of the microbial fungi community nurturing nearby plants. Native, beneficial insects, amphibians and reptiles, birds and mammals can occupy an array of niches driving the ecosystem to full productivity.

At the same time, the Head of Trent Woodway can provide an ecologically important, aesthetic corridor to accommodate wildlife movement as well as hiking, biking and other uses. Movement corridors illustrated in Figures 5-7 offer 'edge' habitats, meaning they simultaneously support the needs of many different species. Connecting Knypersley Reservoir with the Chatterley Whitfield Conservation Bank can help ensure healthy, sustainable bird, mammal and herptile populations. And because wildlife are essential to the health of associated plant communities, this dual project offers prospects for rapidly improve the ecological resilience of the entire region.



Figures 5-7. Biological corridors offer a wide range of important ecological, aesthetic and health-related benefits.

Next Steps

Once incentive mechanisms have been confirmed for the proposed Stoke-on-Trent projects, CIC project managers will engage the UK Department of Environment (DEFRA) to solicit advice as to high value habitats and species native to the Moorlands District. Managers will also engage the UK rewilding and permaculture community to solicit their advice on an integrated wild permaculture approach. A concept plan will be developed, with options, defining a range of project costs that are prioritized for funding purposes. Project funds will be solicited from local communities, Trusts and grant-making organizations, as well as from private sector interests such as the insurance and health care industries.

With staged funding in hand, design work on the woodway and conservation bank will begin in 2016.

More on Ecosystem Service Values

Ecosystem services are the foundation of all economic productivity. Eco-services such as climate and flood regulation, purification of the air, reuse of wastes, maintenance of soil fertility, water filtration and storage, as well as regulation of pests are critical to quality of life. A rich and diverse mix of native species and habitats (biodiversity) is crucial to optimizing ecosystem services and supporting community sustainability and resiliency goals.

Since the late 1990s economists have known that the value of these services ranges to the £ trillions in terms of replacement costs alone[1]. Further, active improvement of eco-services has been shown to pay similar-scale dividends within relatively short timeframes[2]. Whether improvements are funded by governments, citizen groups, or private sector participants, positive return on investment has been routinely demonstrated for well-implemented ecosystem restoration projects.

Experience beyond the European Community or Australia, such as in the United States, suggests that an optimum balance between local economic and ecological values stems from the joint involvement of public and private sector participants in quality of life initiatives. To this end, government agencies have created policy incentives for market-based, public-private compensatory mitigation (biodiversity offset) projects that can, in turn, lead to win-win outcomes for ecological restoration investments.

Incentive programs have been the key to securing voluntary private sector participation in eco-service improvement projects designed to meet public interest needs. In the US, incentive-based environmental markets set the stage for 'protection, enhancement, restoration or even creation' (PERC) of property based ecosystem services. Business and industry are encouraged to compensate for development impacts to high-value biodiversity resources by purchasing mitigation credits / biodiversity offsets earned when landowners achieve measured, agency-approved ecological outcomes (increased ecosystem services) from successful PERC projects.

Similar opportunities may exist in the EC for restoring ecological functionality in overbuilt or degraded commercial and industrial landscapes. For example, the UK Social Investment Tax Credit was conceived as a way to stimulate investment in local sustainability or quality of life enhancement programs. This scheme includes a variety of mechanisms established to incentivize private sector investment, including business rate relief, annual and capital investment allowances, capital gains roll-over relief and more[3].

The SITR certificate is of particular interest for the two proposed Stoke on Trent projects. SITR rules offer a range of income and capital gains tax benefits which can be claimed by investors for projects dedicated to social enterprise. These credits can be earned on project investments made or capital gains arising from the present day to April, 2019.

For more information contact Vertis Finance or EASI at the email addresses provided below.

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[1] See, for example, Costanza et al, 'The value of the world's ecosystem services and natural capital', *Nature*, 15 May, 1997. At: http://www.esd.ornl.gov/benefits_conference/nature_paper.pdf

[2] See: *The New Economy of Nature*; Daily, Gretchen and Katherine Ellison, 2003.

[3] See: http://www.greatbusiness.gov.uk/tax-relief-and-incentives-for-businesses-and-investors/

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