

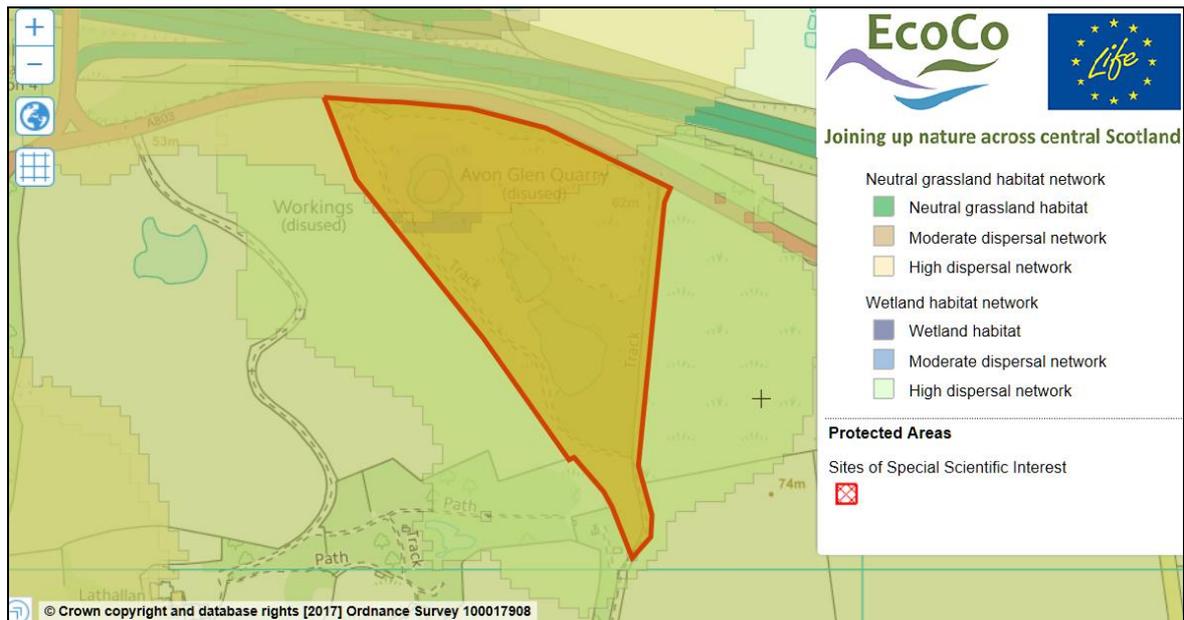
## Action C8; Innovative improvements at newly identified sites EcoCo new sites assessment: Avonglen Quarry

### Description (How, what, where and when)

This component of the Falkirk Stepping Stones management zone will restore species-rich grassland and bare ground at Avonglen Quarry on the outskirts of Polmont in Falkirk. This former sand and gravel quarry has been derelict since the 1990's. The site has important open mosaic habitat that supports species-rich grassland, early successional communities, wetland, scrub and bare ground that is home to a range of invertebrates as well as Great crested newts and Tawny owls. The action set out within this project will remove and thin Gorse scrub from across the site to prevent the loss of species-rich grassland and bare ground that will benefit pollinating insects and ground nesting invertebrates. This project will be delivered by Buglife with the help of The Conservation Volunteers and support from Falkirk Council Ranger Service.



Aerial view of Avonglen Quarry



Map of Avonglen Quarry showing existing habitat networks

**Reasons why this action is necessary**

There has been limited management of Gorse at Avonglen Quarry which is currently developing into dense stands and encroaching across the site onto areas of bare ground, species-rich grassland and early successional communities. The removal of Gorse will ensure that these habitats are restored and enhanced, protecting a key element of the brownfield networks within this urban part of central Scotland that are important refuges for invertebrate diversity.

**Beneficiary responsible for implementation**

Buglife

**Responsibilities in case several beneficiaries are implicated**

Buglife

**Expected results (quantitative information when possible)**

- Thinning and removing Gorse scrub from across the site.

**How was the cost of the action estimated?**

The cost of the action was estimated through a meeting between Falkirk Council Ranger Service and Buglife during a site visit on the 10<sup>th</sup> of March 2017. The site visit decided on the best actions to take to enhance the site and the number of activity days required to complete the action. The final costs were developed by Buglife and approved by Falkirk Council Ranger Service before being submitted.

**Permissions/licences required**

Falkirk Council (landowner) permission may be required although we have verbally agreed that they are happy with the work to go ahead. Buglife have a good working relationship and track record with Falkirk Council.

# Ecological Coherence Assessment

<b>1. EcoCo Partner(s)</b>
Buglife
<b>2. Vision</b>
<p>The vision for this site within the “Falkirk Stepping Stones” management zone is for a better managed area of brownfield land, in good ecological condition, contributing to networks and providing significant biodiversity.</p> <p>This site is located on the outskirts of Falkirk and to the west of the heavily urbanised area of Polmont. The core area of Avonglen Quarry is roughly 5.5 hectares in size. This brownfield site contains valuable open mosaic habitat with areas of wetland, ponds, bare ground, scrub, woodland, early successional communities and species-rich grassland. Through the previous use of the site as a sand and gravel quarry, it now has slopes of varying height, structure and steepness across the site. This configuration is advantageous to the biodiversity present here.</p> <p>The site is currently managed by Falkirk Council through the ranger service. The site currently has a group of volunteers who participate in surveys and the nearest primary school at Whitecross have been engaged in activities at the site.</p> <p>The council have managed to get Froglife to help manage the wetland at the site to create new ponds and clear ponds already on site to provide further habitat for the legally protected Great crested newt. There is no management of the Gorse that is currently forming dense stands and spreading across the site removing bare ground and shading out species-rich areas and threatening the availability of OMH important for many invertebrates. The value of the bare ground and species-rich grassland habitat at this site, their contribution to the overall network across Falkirk, and the sites urban location all make this a priority site within the “Falkirk Stepping Stones” management zone for EcoCo.</p>
<b>3. Ecological coherence assessment</b>
<p><b><i>The following section follows the ecological coherence protocol, assessing each of the elements in turn to give a qualitative assessment of the likelihood of significantly improving ecological coherence in the management zone. The ECP GIS tool has been used, along with detailed reports and surveys, partner organisation local knowledge, open data sources and SNH advice.</i></b></p>
a) Ecological functionality
<p>Avonglen Quarry is surrounded mainly by farmland except to the north, where the A803 and busy M9 pass. It is thought that quarrying at this site ceased about 20-30 years ago and through natural succession, the site today has an open mosaic habitat (OMH) with areas of bare ground, open grassland, ruderals, semi-natural broadleaved woodland, scrub and wetland including several ponds. Areas of bare ground are mostly confined to the old quarry to the north west of the site; although there are smaller patches elsewhere on site. The bare ground is composed of sand, gravel and thin soils. Due to the former working nature of the site, a variety of slopes are currently present, especially within the north west area; several of these slopes are steep sided and include vertical areas.</p>



Image showing bare ground and varied structure of the slopes at Avonglen Quarry.

Many of the habitats present at this site are priority habitats in Scotland highlighting this site's importance for wildlife. The varied habitats present allow many species to complete their life cycle at the same site. Additionally the site acts as a 'stepping stone' allowing the moving and mixing of individuals and species across the area.

Falkirk Council has known about the importance of Avonglen Quarry for wildlife, in particular for the legally protected Great crested newts, for several years and the ranger service currently manage and look after the site. An initial visit to the site by Buglife in 2013 identified the importance of the sites brownfield and open mosaic habitat for invertebrates. A one day survey of the site with a report to identify management needs was completed by Buglife in May 2015. During the one day survey a number of invertebrates were recorded including Seven spot ladybirds (*Coccinella septempunctata*), the Chocolate mining bee (*Andrena scotica*), the hoverfly *Rhingia campestris* and Hawthorn shield bug (*Acanthosoma haemorrhoidale*).

Over the last few years there has been a focus on managing woodland and ponds but little management of the areas of bare ground and species-rich grassland. Invasive Gorse is starting to take over parts of the site and it has been observed that bare ground important for ground nesting beetles and solitary bees (especially on the slopes) may be completely lost if the Gorse is not managed.

#### b) Diversity

There is significant potential to enhance and increase both the biological and structural diversity at Avonglen Quarry through the removal and thinning of Gorse. The threat of succession, with Gorse encroaching and forming dense stands will, if left unchecked, lead to a lower diversity and a more uniform habitat. Gorse is known to be highly invasive if left unmanaged and is known to decrease overall species and structural diversity. Intervention to remove and control Gorse will lead to better control in the future and this will significantly increase diversity in the area and ensure that this site remains in good quality.

#### c) Connectivity

Buglife have identified a chain of brownfield sites throughout the Falkirk area comprising the Falkirk Stepping Stones of which Avonglen Quarry is one component along with Carron Dams and Bonnyfield LNR. Together with these and other sites, they allow species and individuals to move and mix across the area and into neighbouring West Lothian and beyond. Acting as a stepping stone these brownfield sites provide a series of vital refugia for

invertebrates, especially rare, threatened and declining species. Losing any one site within this chain would reduce the functionality of the whole. This project will help secure the future of this wider landscape biodiversity.

**d) Patch size**

At 5.5ha, this brownfield site is well over the 0.25ha minimum identified by Buglife as being the lower threshold for restoration important for invertebrates.

**e) Habitats/species of conservation interest**

Avonglen Quarry is recognised by Falkirk Council as being a key site for supporting wildlife and delivering urban (open mosaic habitat) conservation. The site is home to a number of Local Area Biodiversity Action Plan priority species for Falkirk including Common blue butterflies (*Polyommatus icarus*) and Bullfinch (*Pyrrhula pyrrhula*).

**4. Ecosystem services assessment**

Service	Provided in management zone?
Accessible nature	√
Education	√
Green travel	X
Carbon	√
Local climate regulation	X
Air purification	√
Noise regulation	X
Water purification	√
Pollination	√

Although this site doesn't meet all nine ecosystem services targets assessed through the EcoCo project, it does meet at least six; the site may help with local climate regulation. There is access to the site although due to its location it is not regularly visited by people. The council have run various activities at the site for volunteers as well as for pupils from the nearby Whitecross primary School. This has allowed them to show people the importance of the site for wildlife and how it can be managed and appreciated better. The site is important in helping to store local carbon, purifying air and water and is incredibly important for pollination providing both forage and nesting habitat.

**5. Opportunity assessment**

Buglife have a good working relationship with Falkirk Council and their ranger service. This allows us to start work on the ground quickly without any need for lengthy discussions with landowners. This will maximise the EcoCo contribution to the project, and deliver the greatest benefits for ecological coherence.

**a) Feasibility**

Falkirk Council, the landowner, is fully engaged with and supportive of the main aims to remove and thin Gorse from this site. The target to run four days with The Conservation Volunteers to remove and thin the Gorse in this project is realistic and achievable.

