



**LIFE 13 BIO/UK/000428 EcoCo LIFE
Garibaldi Bing; EcoCoLife Monitoring Impact Report. (Action D.6.)**

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1 Introduction

The Inner Forth area was at the heart of Scotland's industrial revolution and particularly important for our coal industry. Large bings have been left with the demise of the coal industries and are an important reminder of our past. These brownfield sites have been reclaimed by nature. Derelict coal bings across the Inner Forth area provide valuable habitat for a wide range of species particularly invertebrates. These brownfield sites contain important habitat features (species rich grassland, bare ground, early successional habitats) that are fragmented in the natural landscape. They are also important 'stepping stones' across an area. Garibaldi Bing in Carronshore in Falkirk is one of these bings that has important early successional habitat which is beginning to be shaded by birch (Fig. 1).



Figure 1. Aerial map of Garibaldi Bing showing farmland that surrounds the site.

2 Background

Garibaldi Bing is a derelict spoil heap from a previously active coal field. The site has been derelict since the 1980's and was re-profiled so that it had a flat plateau. Today the site is surrounded by farmland and acts as a stepping stone for wildlife moving through the area. It is particularly important for ground beetles and spiders but also breeding and over-wintering birds.

Open mosaic habitat at this site is composed of early successional communities, grassland and scrub. Woodland is along the north, east and south of the site and a ditch with reeds runs along the west of the site. The site is owned by Falkirk Council and there has been no recent management.

The early successional communities of lichens and moss at the site are unique and limited in Falkirk. A diverse mix of *Cladonia* species is present. With the increasing pressures of birch spreading across the site, volunteers from The Conservation Volunteers (TCV) removed scrub to reduce shading of the unique lichen community (Fig. 2). Volunteers focused on the north-west area of the site where the best habitat remains for the lichens (Fig. 3).



Figure 2. Birch has spread onto an area of early successional communities diverse in lichens and mosses.



Figure 3. Volunteers from TCV removing scrub from the area of lichen and moss.

3 Monitoring

A survey by Buglife was undertaken at Garibaldi Bing in 2010/2011 and recorded plants, invertebrates and other wildlife (Annex 1: Table 1-4). 105 species of invertebrate were recorded from ten orders during this survey (Annex 1: Table 2).

Since this survey the site has been visited regularly to monitor the habitat.

4 Future monitoring

Buglife plan to monitor this site to ensure that the early successional communities remain present on site. We will work with Falkirk Council to inform them of any management that is required and may look at putting a future funding proposal together to aid any management that is required to ensure the long-term survival of the early successional community at this site.

5 Acknowledgements

Buglife would like to thank Falkirk Council and TCV for their support and help through this project.

6 Annex 1

Table 1. List of plants recorded at Garibaldi Bing during Buglife surveys in 2010/2011.

Scientific Name	Common Name
<i>Anagallis arvensis</i>	Scarlet pimpernel
<i>Arabidopsis thaliana</i>	Thale cress
<i>Brassica napus</i>	Oil seed rape
<i>Cerastium fontanum</i>	Common mouse ear
<i>Chamerion angustifolium</i>	Rosebay willowherb
<i>Cirsium arvense</i>	Creeping thistle
<i>Cirsium palustre</i>	Marsh thistle
<i>Cirsium vulgare</i>	Spear thistle
<i>Crataegus monogyna</i>	Hawthorn
<i>Dactylorhiza fuchsii</i>	Common spotted orchid
<i>Dactylorhiza purpurella</i>	Northern marsh orchid
<i>Epilobium hirsutum</i>	Great willowherb
<i>Epilobium montanum</i>	Broad-leaved willowherb
<i>Euphrasia nemorosa</i>	Eyebright
<i>Fragaria vesca</i>	Wild strawberry
<i>Hieracium vulgatum</i>	Common hawkweed
<i>Hypochaeris radicata</i>	Cats ear
<i>Lapsana communis</i>	Nipplewort
<i>Medicago lupulina</i>	Black medick
<i>Myosotis species</i>	Forget me not species
<i>Odontites vernus</i>	Red bartsia
<i>Pilosella officinarum</i>	Mouse ear hawkweed
<i>Plantago lanceolata</i>	Ribwort plantain
<i>Potentilla erecta</i>	Tormentil
<i>Prunella vulgaris</i>	Self heal
<i>Ranunculus acris</i>	Meadow buttercup
<i>Ranunculus repens</i>	Creeping buttercup
<i>Rosa canina</i>	Dog rose
<i>Rubus fruticosus</i>	Bramble
<i>Rumex acetosa</i>	Common sorrel
<i>Rumex crispus</i>	Curled dock
<i>Senecio jacobaea</i>	Ragwort
<i>Silene alba</i>	White campion
<i>Sonchus asper</i>	Prickly sow-thistle
<i>Sorbus aucuparia</i>	Rowan
<i>Stellaria media</i>	Common chickweed
<i>Trifolium repens</i>	White clover
<i>Urtica dioica</i>	Common nettle
<i>Veronica persica</i>	Common field speedwell
<i>Vicia sepium</i>	Bush vetch

Table 2. List of invertebrates recorded at Garibaldi Bing during Buglife surveys in 2010/2011.

Order	Scientific name	Common Name
Aranaea	<i>Clubiona neglecta</i>	Ground spider
Aranaea	<i>Drassodes cupreus</i>	Ground spider
Aranaea	<i>Euphyrs aequipes</i>	Jumping spider
Aranaea	<i>Haplodrassus signifer</i>	Ground spider
Aranaea	<i>Larinioides cornutus</i>	Orb weaver spider
Aranaea	<i>Micaria pulicaria</i>	Ground spider
Aranaea	<i>Pardosa amentata</i>	Wolf spider
Aranaea	<i>Pardosa palustris</i>	Wolf spider
Aranaea	<i>Pardosa pullata</i>	Wolf spider
Aranaea	<i>Tetragnatha montana</i>	Long jawed orb weaver
Aranaea	<i>Theridion impressum</i>	Comb-footed spider
Aranaea	<i>Xysticus cristatus</i>	Crab spider
Coleoptera	<i>Agriotes obscurus</i>	Click beetle
Coleoptera	<i>Amara eurynota</i>	Ground beetle
Coleoptera	<i>Amara lunicollis</i>	Ground beetle
Coleoptera	<i>Amara ovata</i>	Ground beetle
Coleoptera	<i>Anchomenus dorsalis</i>	Ground beetle
Coleoptera	<i>Aphodius rufipes</i>	Scarab beetle
Coleoptera	<i>Athous haemorrhoidalis</i>	Click beetle
Coleoptera	<i>Calathus fuscipes</i>	Ground beetle
Coleoptera	<i>Cantharis nigricans</i>	Soldier beetle
Coleoptera	<i>Cassida rubiginosa</i>	Tortoise beetle
Coleoptera	<i>Catops grandicollis</i>	Round fungus beetles
Coleoptera	<i>Chaetocnema concinna</i>	Flea beetle
Coleoptera	<i>Coccinella septempunctata</i>	7 spot ladybird
Coleoptera	<i>Curtonotus aulicus</i>	Ground beetle
Coleoptera	<i>Nebria brevicollis</i>	Ground beetle
Coleoptera	<i>Nicrophorus humator</i>	Carrion beetle
Coleoptera	<i>Nicrophorus investigator</i>	Carrion beetle
Coleoptera	<i>Nicrophorus vespilloides</i>	Carrion beetle
Coleoptera	<i>Notiophilus biguttatus</i>	Ground beetle
Coleoptera	<i>Olisthopus rotundatus</i>	Ground beetle
Coleoptera	<i>Oulema melanopus</i>	Cereal leaf beetle
Coleoptera	<i>Phyllobius pomaceus</i>	Weevil
Coleoptera	<i>Pterostichus madidus</i>	Ground beetle
Coleoptera	<i>Pterostichus melanarius</i>	Ground beetle
Coleoptera	<i>Pterostichus niger</i>	Ground beetle
Coleoptera	<i>Tachyporus nitidulus</i>	Rove beetle
Coleoptera	<i>Thanatophilus rugosus</i>	Carrion beetle

Diptera	<i>Bibio marci</i>	Saint marks fly
Diptera	<i>Episyrphus balteatus</i>	Marmalade hoverfly
Diptera	<i>Eristalis tenax</i>	Hoverfly
Diptera	<i>Helophilus pendulus</i>	Hoverfly
Diptera	<i>Melanostoma mellinum</i>	Hoverfly
Diptera	<i>Nemotelus notatus</i>	Soldier fly
Diptera	<i>Syrphus ribesii</i>	Hoverfly
Diptera	<i>Tipula paludosa</i>	Cranefly
Hemiptera	<i>Agallia venosa</i>	Leaf hopper
Hemiptera	<i>Anoscopus histrionicus</i>	Leaf hopper
Hemiptera	<i>Aphrodes limicola</i>	Leaf hopper
Hemiptera	<i>Aphrodes makarovi</i>	Leaf hopper
Hemiptera	<i>Blepharidopterus angulatus</i>	Plant bug
Hemiptera	<i>Chlamydatus wilkinsoni</i>	Seed bug
Hemiptera	<i>Dicyphus epilobii</i>	Damsel bug
Hemiptera	<i>Dolycoris baccarum</i>	Hairy shield bug
Hemiptera	<i>Eupelix cuspidata</i>	Frog hopper
Hemiptera	<i>Euscelis incisus</i>	Leaf hopper
Hemiptera	<i>Leptopterna dolabrata</i>	Plant bug
Hemiptera	<i>Leptopterna ferrugata</i>	Plant bug
Hemiptera	<i>Lygus punctatus</i>	Plant bug
Hemiptera	<i>Nabis flavomarginatus</i>	Damsel bug
Hemiptera	<i>Nabis limbatus</i>	Marsh damsel bug
Hemiptera	<i>Neophilaenus lineatus</i>	Frog hopper
Hemiptera	<i>Nysius thymi</i>	Seed bugs
Hemiptera	<i>Oncopsis subangulata</i>	Leaf hopper
Hemiptera	<i>Oncopsis tristis</i>	Leaf hopper
Hemiptera	<i>Philaenus spumarius</i>	Leaf hopper
Hemiptera	<i>Planaphrodes trifasciata</i>	Leaf hopper
Hemiptera	<i>Psammotettix confinis</i>	Leaf hopper
Hemiptera	<i>Psammotettix nodosus</i>	Leaf hopper
Hemiptera	<i>Stenodema calcarata</i>	Plant bug
Hemiptera	<i>Stenodema laevigata</i>	Plant bug
Hemiptera	<i>Trigonotylus ruficornis</i>	Plant bug
Hymenoptera	<i>Argogorytes mystaceus</i>	Solitary wasp
Hymenoptera	<i>Bombus lapidarius</i>	Red tailed bumblebee
Hymenoptera	<i>Bombus lucorum</i>	White tailed bumblebee
Hymenoptera	<i>Bombus pascuorum</i>	Common carder bee
Hymenoptera	<i>Bombus pratorum</i>	Early bumblebee
Hymenoptera	<i>Bombus terrestris</i>	Buff tailed bumblebee
Hymenoptera	<i>Formica lemani</i>	Ant

Hymenoptera	<i>Halictus tumulorum</i>	Solitary bee
Hymenoptera	<i>Lasius niger agg.</i>	Black garden ant
Hymenoptera	<i>Myrmica ruginodis</i>	Red ant
Hymenoptera	<i>Myrmica sabuleti</i>	Red ant
Hymenoptera	<i>Myrmica scabrinodis</i>	Red ant
Hymenoptera	<i>Vespula vulgaris</i>	Common wasp
Isopoda	<i>Philoscia muscorum</i>	Common striped woodlice
Isopoda	<i>Porcellio scaber</i>	Rough woodlice
Lepidoptera	<i>Aglais urticae</i>	Small Tortoiseshell
Lepidoptera	<i>Aphantopus hyperantus</i>	Ringlet butterfly
Lepidoptera	<i>Chiasmia clathrata</i>	Latticed heath moth
Lepidoptera	<i>Inachis io</i>	Peacock butterfly
Lepidoptera	<i>Lycaena phlaeas</i>	Small copper
Lepidoptera	<i>Maniola jurtina</i>	Meadow brown
Lepidoptera	<i>Pieris napi</i>	Green veined white butterfly
Lepidoptera	<i>Pieris rapae</i>	Small white butterfly
Lepidoptera	<i>Polygonia c-album</i>	Comma butterfly
Lepidoptera	<i>Semiothisa clathrata</i>	Latticed heath moth
Lepidoptera	<i>Xanthorhoe montanata</i>	Silver ground carpet
Mollusca	<i>Cepaea nemoralis</i>	Brown lipped snail
Opiliones	<i>Mitopus morio</i>	Harvestmen
Opiliones	<i>Phalangium opilio</i>	Harvestmen
Opiliones	<i>Platybunus triangularis</i>	Harvestman
Orthoptera	<i>Myrmeleotettix maculatus</i>	Mottled grasshopper
Orthoptera	<i>Omocestus viridulus</i>	Common green grasshopper

Table 3. List of birds recorded at Garibaldi Bing during Buglife surveys in 2010/2011. Purple denotes *Scottish biodiversity action plan species*

Scientific Name	Common Name
<i>Aegithalos caudatus</i>	Long tailed tit
<i>Alauda arvensis</i>	Skylark
<i>Apus apus</i>	Swift
<i>Buteo buteo</i>	Common buzzard
<i>Calumba palumbus</i>	Wood pigeon
<i>Cyanistes caeruleus</i>	Blue tit
<i>Emberiza citrinella</i>	Yellowhammer
<i>Emberiza schoeniclus</i>	Reed bunting
<i>Falco tinnunculus</i>	Kestrel
<i>Fringilla coelebs</i>	Chaffinch
<i>Hirundo rustica</i>	Swallow
<i>Oenanthe oenanthe</i>	Wheatear
<i>Parus major</i>	Great tit

<i>Sylvia atricapilla</i>	Blackcap
<i>Sylvia communis</i>	Whitethroat
<i>Troglodytes troglodytes</i>	Wren
<i>Vanellus vanellus</i>	Lapwing

Table 4. List of mammals recorded at Garibaldi Bing during Buglife surveys in 2010/2011.

Scientific name	Common Name
<i>Capreolus capreolus</i>	Roe deer
<i>Oryctolagus cuniculus</i>	Rabbit
<i>Vulpes vulpes</i>	Red fox