



ENGLISH HERITAGE

Landscape Advice Note: Vegetation on Walls



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This Landscape Advice Note looks at the types of vegetation on walls and their impact on historic sites.

INTRODUCTION

Walls, and other exposed stonework, are colonised by plants in a similar way to the colonisation of cliffs and scree. These natural features are uncommon, especially in the lowlands, so walls are important for the conservation of plants which might otherwise be very isolated. Some wall plants even have 'wall' or 'muralis' as part of their common or scientific name such as Wall-flower (*Erysimum cheiri*) or Ivy-leaved toadflax (*Cymbalaria muralis*), which shows their long established relationship with these man-made structures.

Most higher plants and ferns establish in mortar filled joints in the stonework, or take advantage of cracks and crannies in old walls. The mortar is usually more alkaline than the stonework so a wall built of acid stone may still support lime loving plants. Lichens and mosses which grow on the stonework itself are strongly affected by substrate and aspect, so variation in construction material and orientation can produce conditions suitable for different species. The lichens on a wall capping are usually different from those growing on the face of the wall. For example, the coping stones on the walls of Down House garden support different species from the faces of the brick and flint walls. Because building stone is sometimes carried many miles for construction, it can provide different conditions to those which may be found naturally for example, granite or sandstone brought into a limestone area. The lichens on the sandstone pillar at St Augustine's Abbey, Canterbury are unusual for the south-east of England where most of the exposed rock is soft and chalky.

WHY ARE WALL PLANTS IMPORTANT?

Walls provide demanding conditions for plants because of exposure, drought and sparse amounts of soil development; which leads to the development of a specialised flora. True wall plants are able to withstand extremes of temperature and drought. A distinction can be made between plants which are able to tolerate these demanding conditions: climbers which are rooted in soil at the base of the wall; and common weedy species rooting through the wall and exploiting soil development on ledges and wall tops, and where nutrients are splashed up against the wall face. These specialised conditions allow uncommon plants, which would be displaced by more vigorous, common species on less hostile sites, to grow. Vertical walls tend to support more specialised species, while

walls which lean, allow soil to accumulate and less specialised species to establish.

Some weathering of the stonework and mortar must occur before any plants are able to colonise but this can take a long time and the plants present on a wall may represent several decades of growth. Soft lime mortar will weather more readily than hard cement based mortar. As many walls have a history of repair work, the plants present may date from different periods.

Because of our mild, wet climate the wall flora in Britain is often richer than that in more continental areas of Europe. Even within Britain, some wall plants need more moist conditions and are mainly found in the west for example, Navelwort (*Umbilicus rupestris*) and Rusty-back fern (*Ceterach officinarum*).

Historic sites are especially important, because the structure and age of their walls provide a range of opportunities for plants such as weathered stonework and lime-rich mortar.

WHICH PLANTS ARE FOUND ON WALLS?

Wall flora is composed of a mixture of plant groups including lichens which are often highly coloured and textured, and form an attractive and distinctive patina. In practical terms, plants on walls can be divided into six groups:

- Woody species (trees and shrubs)

These plants have one or more woody stems which increase incrementally every year. Almost any species will grow on walls given the right circumstances but species with wind-blown seeds such as the Butterfly-bush (*Buddleja davidii*), Sycamore (*Acer pseudoplatanus*) and Ash (*Fraxinus excelsior*) or those with seeds spread by birds such as Yew (*Taxus baccata*) are more common. Trees and shrubs will always cause damage when growing on walls and should be removed at the earliest opportunity.

- Woody herbaceous perennials

These include some of the most commonly recorded species on historic properties, Pellitory-of-the-wall (*Parietaria judaica*), Wall-flower (*Erysimum cheiri*) and Red valerian (*Centranthus ruber*). Species such as bramble (*Rubus fruticosus* agg.) whose seeds are spread by birds are also commonly found. These species can develop strong, woody bases as they become older. These can do damage to some walls and may need to be removed, particularly as they get older.

01



02



FRONT COVER

Harebells growing on a wall at Byland Abbey © English Heritage Photo Library

IMAGE 01

Woody trees and shrubs will always cause problems and should be removed at the earliest opportunity © Alan Cathersides

IMAGE 02

Soft herbaceous perennials such as the Fairy foxglove (*Erinus alpinus*) can be very attractive in flower and are unlikely to cause damage © Alan Cathersides

- Soft herbaceous perennials

These include ferns, especially Hart's-tongue fern (*Phyllitis scolopendrium*), Maidenhair spleenwort (*Asplenium trichomanes*) and Wall-rue (*Asplenium ruta-muraria*), Harebell (*Campanula rotundifolia*), Biting stonecrop (*Sedum acre*) and other stonecrops (*Sedum* spp.), Wall-rocket (*Diplotaxis* spp.) and Ivy-leaved toadflax (*Cymbalaria muralis*). These plants are unlikely to cause damage except in exceptional circumstances and as a general rule should be left untouched unless they are clearly responsible for damage.

- Annual and ephemeral plants

These include small flowering plants like Rue-leaved saxifrage (*Saxifraga tridactylites*) with its reddish, three-lobed leaves, the nationally scarce Wall bedstraw (*Galium parisiense*) and common Whitlowgrass (*Erophila verna*) which flowers early in the spring. Many of these small, annual plants germinate in the autumn, are in full leaf all winter, and flower and set seed in the spring so making maximum use of available moisture and avoiding summer drought. These species are extremely unlikely to cause damage to any built structure and should be left alone unless there are particular reasons for removal. Although they often grow in cracks they are merely exploiting an opportunity and do not cause cracks in the first place or grow in such a way that will make them worse.

- Lower plants (lichen, mosses, algae, liverworts)

These can occur in small quantities, or as luxuriant growth depending on the moisture, aspect and recent management of the wall. These plants do not generally damage walls and should be treated in the same manner as annual and ephemeral plants, being left untouched unless there are clear and specific reasons for their removal.

- Climbers

There are a number of climbing or scrambling plants which can be found growing over walls but away from garden areas. The most commonly encountered is Ivy (*Hedera helix*). Although this has long been automatically considered unacceptable for the conservation of stonework, because of the damage that may be caused, it is advisable to look at the particular circumstance in each case. In many instances Ivy does not actually root into the structure and may actually be more protective than damaging shielding masonry from rain and frost.

WALL FAUNA

Wall vegetation, especially Ivy, provides a habitat for animals to live in and serves as places for hibernating butterflies and moths in winter, and sites for birds to nest during the spring. Ivy provides further benefit as it flowers and fruits late in the autumn and winter when other flowers and berries are not available as food for insects and birds. Rare snails can live in wall crevices such as at Dover Castle. Solitary bees and wasps burrow in soft mortar or crumbling stonework. Different species of invertebrates inhabit vegetated and unvegetated walls in both coastal and inland sites. Hot, sunny, south-west facing walls are best for burrowing solitary bees and wasps to nest in, as well as for predators such as the Zebra-spider (*Salticus scenicus*). Slow worms, and other lizards, bask on sunny walls. Bats may roost or hibernate deep inside old walls as may amphibians, particularly newts. Stoats and weasels may hunt for food amongst the wall and its vegetation. Pellitory-of-the-wall, a generally common wall plant, is the food plant of the rare Bloxworth Snout moth (*Hypena obsitalis*). It has been estimated that around 10 per cent of the 600 species of spider found in Britain are dependant on walls. Fauna are rarely damaging to walls as they generally exploit existing opportunities rather than create new ones. Burrowing bees and wasps do create their own opportunities and on occasions when these occur in large numbers can be damaging but generally they are only found in small numbers.

APPEARANCE OF SITES

Wall vegetation can also add to visitor's enjoyment of a property. The Fairy foxglove (*Erinus alpinus*), bright pink in full flower, at Middleham and Helmsley Castles in North Yorkshire is one of the most distinctive aspects of these sites in mid-June. Lichen covered stonework may be more attractive than a bare surface. Partial cleaning, for example after vandalism, can leave an unsightly 'ghost', within the patina of lichen growth.

HOW TO CONSERVE WALL FLORA?

The key to effective conservation of the plants and animals living on walls is biological survey. The aim should be to establish the significance of the wall flora. Questions which might be addressed include:

- Whether the species present are common or rare, either nationally or in that locality?
- Are they present in great abundance?
- If removed would they readily recolonise from nearby walls, or could this take many years?

- How common is the particular combination of species?

Specialist surveyors may be required for the lichens and mosses, and some groups of invertebrates, but most of the ferns and flowering plants can be identified by a competent botanist.

Within many historic properties, biological survey information may have already been collected in the past and this will often provide useful comparative data. This information can be compared with the results from a structural survey of the condition of the wall and the potential for damage to be caused to the stone or mortar, to help decide on the appropriate course of action. The presence of crevices and damp within walls may indicate neglect, and structural problems, which need to be addressed.

As a general principle, wherever possible, maintenance or repair work should be phased over several years to allow some regeneration of wall plants after consolidation from as yet untouched sections. If feasible, sections of old wall, which do not need repair or which contain rare plants, should be incorporated within the repaired structure to facilitate future colonisation. Where stonework has to be removed temporarily to allow for repair, ensure that it is replaced in the same location and orientation on completion of the work as many of the lower plants are highly specific about growing conditions. Some species of plants and animals are protected under the Wildlife and Countryside Act (1981) and some walls are in areas protected as Sites of Special Scientific (SSSIs) or local wildlife sites. In these situations Natural England or the county wildlife trust should be asked for advice. Both will be able to recommend local biological surveyors.

GENERAL RECOMMENDATIONS

Control of vegetation on standing remains and other walls may be necessary for a number of reasons, such as preventing damage from woody plants, clearing areas for recording or de-vegetating to allow consolidation to take place. However, consideration should be given to the fact that many plants which grow on walls cause no damage, can have considerable ecological value and might also add to the visual aspect of the wall.

It is recommended that before treatment is decided upon, careful consideration should be given to what harm is actually being done to the wall and by what plants. Vegetation should not simply be removed for no other reason than that it is there in the first place.

The likelihood of damage from different types of plants has already been discussed above. The nature

conservation value of the plants and animals will have to be balanced against conservation of the wall itself. In some cases, important plants can be removed from the wall to allow consolidation work, and then replaced within specially created crevices or on the wall top.

Where ever possible vegetation should be removed by hand with minimal use of chemicals.

SOFT CAPPING

In some cases wall flora, especially a grassy turf on the top of a ruined wall, can protect the wall from extremes of temperature and heavy rainfall. More equitable conditions within a wall will help conserve the wall itself. This turf may be a valuable wildlife habitat conserving a number of interesting plants and animals. The role of wall top vegetation should be carefully considered before any decision to remove it is taken. Increasingly, soft cappings are being installed onto wall tops to assist their future conservation (see Further Information).

FURTHER INFORMATION

Cooper, N 1995 *Wildlife in church and churchyard; plants, animals and their management*. London: Church House Publishing

Gilbert, O 1992 *Rooted in stone: The natural flora of urban walls*. Peterborough: English Nature

Darlington, A 1981 *Ecology of Walls*. London: Heinemann Educational Books

English Heritage 2010 *Ivy on Walls*. English Heritage www.english-heritage.org.uk/publications/ivy-on-walls/

Lee, Z, Viles, H and Wood, C 2009 *Soft Capping Historic Walls - A Better Way of Conserving Ruins?* www.english-heritage.org.uk/publications/soft-capping-historic-walls/

Natural England, 2009 *Green walls: an introduction to the flora and fauna of walls (TIN030)* publications.naturalengland.org.uk/publication/30013

Natural England, 2009 *Green walls: specialist and companion plant species (TIN052)* publications.naturalengland.org.uk/publication/23027

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