

Stonesfield Orchard

The site has tremendous potential as a 'connector' site considering the arable nature of the landscape surrounding Stonesfield. Most of the hedgerows between fields and leading to important conservation areas (SSSI) are in poor condition, with decreasing numbers of significant tree species. Many of the remaining trees are aging and offer veteran features for specialist wildlife. There are issues with a loss of hedgerow trees and lack of natural regeneration, in particular along local sites where natural selection is allowed to occur, which improves resilience and maintains the local biodiversity. The lack of natural regeneration, orchards, hedgerows and biodiversity is linked to intensive agriculture practices, poor management techniques and disease Dutch elm disease had negative impacts on hedges, as the English elm, *Ulmus minor* var. *vulgaris*, was a major hedgerow tree. Ash, *Fraxinus excelsior*, is now the most frequent hedgerow tree and forms the dominant landscape feature in some areas. The threat of ash dieback, *Hymenoscyphus fraxineus* (previously *Chalara fraxinea*), could see the loss of many of these and we may need to think about mitigation.

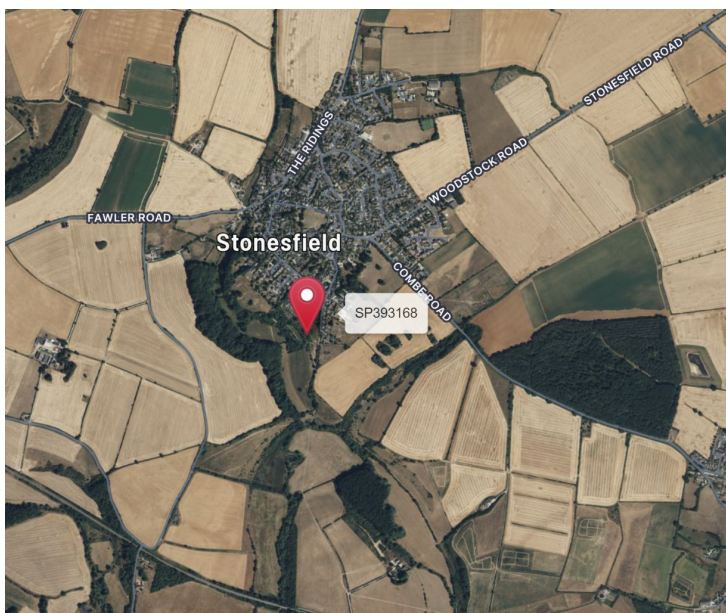


Figure A Orchard Site

Mitigation and protection of landscape features quite often depends on local communities, and this is where projects like wildflower meadow restoration and planting of orchards is particularly important, to establish groups of individuals passionate about protecting the environment. The site lies within Lies an Areas of Outstanding Natural Beauty, is between two SSSI designated sites, lies adjacent to Countryside Stewardship Agreement Management area, is surrounded to the East, West and South by Entry Level plus Higher Level Stewardship, and is in the SSSI Impact Risk Zone.

The proposed orchard is in an ideal location for several reasons, but the main one being the preservation of local habitat. There are several important aspects to take into consideration and not least, is the categorisation of the groundwater (Vulnerability – High). The land is also in a nitrate vulnerable zone as well as a Drinking Water Safeguard Zone (Surface Water).

The Deciduous Woodland (West) is Priority and to the South West there is Priority Habitat composed of Calcareous Grassland. The land is a mix of Acid, Calcareous, Limestone and Neutral Grassland. Of significant importance is the density of Pyramidal Orchids found on the site. They are known to grow in a variety of soil types, including chalky and limestone soils, and

are often associated with calcareous grasslands. Pyramidal Orchids are an important component of grassland ecosystems and play a role in supporting a range of pollinators, including bees, butterflies, and moths (which were relatively scarce during the two site visits). The flowers of the Pyramidal Orchid are known to be particularly attractive to butterflies, such as the Small Skipper and the Marbled White (only the Meadow brown was seen)

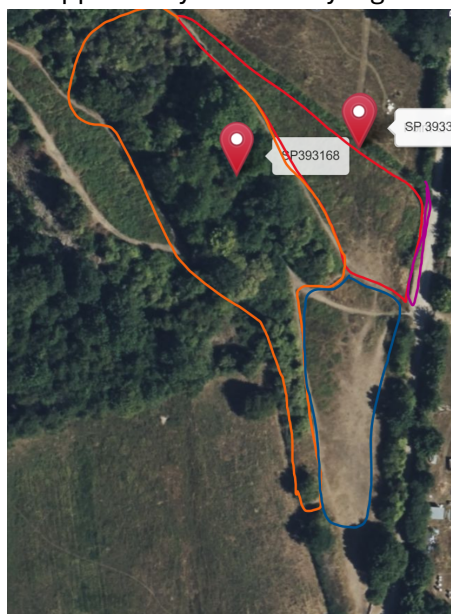
The plant is also known to have a symbiotic relationship with a particular species of fungus, which helps it to absorb nutrients from the soil, and this is critical for the restoration of the land.

This symbiotic relationship between the soil and plant roots is driven by mycorrhizae associations that not only take time to develop but increasingly are held back by years arable chemical applications, lack of plant diversity and associated life form presence (earthworm decline by over 40% in 25 years) and can be helped by use of local mulch. This mulch should be as local as possible and can be made from chippings of wood and grass cuttings derived from remedial work. This also has the added benefit of decreasing the probability of bringing in non-native matter that could be problematic; invasive species and movement of diseased wood costs the UK economy over £4 billion a year.

Despite their importance in the ecosystem, Pyramidal Orchids are under threat due to habitat loss and fragmentation caused by urbanization, intensive agriculture, and changes in land use. The land is former arable land and varies from compacted to severely compacted areas, which will affect the drainage from the built environment (Stonesfield) down to the Evenlode River. The use of fruit trees, even in the depleted hedgerows would have a significant positive impact on the restoration of the habitat.

The woodland (marked in orange) is in a poor state and although there are significant veteran specimens, these are at risk of collapse due to soil compaction, ivy and old man's beard (*Clematis vitalba*). The uncontrolled growth of ivy will also impact the dry-stone wall and hamper natural regeneration. Woodland canopy looked stressed (ivy, compaction) consisting mainly of mature/ semi-mature beech, sub-canopy of hazel, hawthorn, field maple and occasional elm, ground flora sparse with dog's-mercury, a mix of ferns and bryophytes. There was a general lack of deadwood. The regeneration was relatively poor, mainly of ash, also some sycamore regenerating, and of course blackthorn.

Blackthorn is becoming a dominant species and non-chemical methods will have to be used to control these three species (*Clematis vitalba*, blackthorn, ivy) in order that the land not only has an opportunity to naturally regenerate but the identified species (present) are not lost.



Most notable among recorded species is the Glow-worm (*Lampyris noctiluca*) beetle. The larvae of glow-worms feed on slugs and snails of which there were minimal numbers.

Glow-worms are most often found as larvae, living under rocks on chalk or limestone grassland, and feeding on slugs and snails. Gardens, hedgerows, railway embankments, woodland rides, heathlands and cliffs are all possible habitats for glow-worms. With due care, this site could be strategically important for this beetle.

Plant species found on site (demarcated Red - SP 39339 16801)

- Red Hemp-nettle
- White campion
- Meadow crane's-bill
- Beech
- Hazel
- Wych Elm
- Common columbine
- Hawthorn
- Blackthorn
- Hellroot (common Broomrape)
- Pyramidal Orchids
- Oxeye daisy
- Meadow Sage
- Ivy
- Common hogweed
- Elder
- Bird's foot trefoil
 - Common
 - Greater
- Common vetch

Various invertebrate pollinators

- Yorkshire fog
- Cock's-foot