Next Generation Higher National Unit Specification

Ecological and Conservation Horticulture (SCQF level 8)

Unit code: J7AA 48

SCQF level: 8 (16 SCQF credit points)

Valid from: session 2023–24

Prototype unit specification for use in pilot delivery only (version 1.0) September 2023

This unit specification provides detailed information about the unit to ensure consistent and transparent assessment year on year.

This unit specification is for teachers and lecturers and contains all the mandatory information required to deliver and assess the unit.

This edition: September 2023 (version 1.0)

Unit purpose

This unit provides learners with the knowledge and skills they need to work in ecological and conservation horticulture. It focuses on plant ecology and how an understanding of plant ecology can help with planning and decision making in plant conservation and wider conservation.

Before starting the unit, learners would benefit from having a foundation knowledge of plant conservation, ideally having completed Ecology and Environment for Horticulture at SCQF level 7, on which this unit expands.

Unit outcomes

Learners who complete this unit can:

1 examine the current state of global and local plant and habitat conservation
2 relate wild and horticultural plant ecology to their successful conservation and cultivation
3 implement and interpret an ecological survey

Evidence requirements

Learners must provide the following evidence:

Outcome 1

Learners gather evidence that demonstrates that they can analyse a range of plant and habitat conservation programmes in the UK and abroad. They should analyse both in-situ and ex-situ programmes.

Outcome 2

Learners gather evidence that demonstrates that they can assess the reasons for success and failure of conservation programmes, in terms of plant ecology, organisation, and fulfilling the original aims of the programmes.

Outcome 3

Learners gather evidence that demonstrates that they can:

- competently use a key conservation skill
- conduct an ecological site survey using a recognised professional technique, such as (but not limited to):
  - Phase 1 habit survey
  - UK Habitat Classification (UKHab)
  - National Vegetation Classification (NVC)
- assess the conservation value or potential of a site using recognised criteria, such as a designation of:
  - site of special scientific interest (SSSI)
  - local nature reserve (LNR)
  - national nature reserve (NNR)
- investigate the International Union for Conservation of Nature (IUCN) threat status of plants on a site
- produce a conservation plan that aims to enhance the biodiversity of a site

You can assess outcomes 1, 2 and 3 together through a portfolio of evidence.

Knowledge and skills

The following table shows the knowledge and skills covered by the unit outcomes:

Knowledge	Skills
Outcome 1 Learners should understand: ♦ the global and local state of plant and habitat conservation, and the factors that have influenced this	**Outcome 1** Learners can: ♦ evaluate the current level of threat to plants and habitats ♦ confront the factors and challenges of plant and habitat conservation
Outcome 2 Learners should understand: ♦ how wild and horticultural plant ecology relate to their successful conservation and cultivation, including: — practical techniques — planning and organisation of a conservation programme	**Outcome 2** Learners can: ♦ demonstrate techniques used for successful in-situ and ex-situ plant conservation ♦ assess the role of key players in plant conservation
Outcome 3 Learners should understand: ♦ how to implement and interpret an ecological survey	**Outcome 3** Learners can: ♦ competently use a recognised professional survey technique ♦ devise a conservation plan

Meta-skills

Throughout the unit, learners develop meta-skills to enhance their employability in the horticulture sector.

Self-management

This meta-skill includes:

- focusing: managing time effectively; demonstrating plant conservation techniques
- initiative: visiting sites for surveying; implementing ecological surveys

Social intelligence

This meta-skill includes:

- communicating: discussing relevant topics; considering conservation issues, including conflicting interests between different land use bodies
- collaborating: working in groups; coordinating with others to convey information and tackle problems; developing, on an individual and global cross-cultural level

Innovation

This meta-skill includes:

- creativity: coming up with strategies to enhance conservation and biodiversity on a site
- sense-making: evaluating the current level of threat to plants and habitats; interpreting ecological surveys

Literacies

Learners develop core skills in the following literacies:

Numeracy

Learners develop numeracy skills through ecological surveying, monitoring skill development, data collection and using diversity indices.

Communication

Learners develop communication skills by working in groups, to encourage group work skills and communication. The outputs and artefacts enhance communication skills, for example through written work or a presentation.

Digital

Learners develop digital skills and computer literacy by using computers. Learners should use online research, for example to find information on plant ecology.

Delivery of unit

We recommend that you use a range of delivery methods. You should include visits to several case study sites as part of the delivery. This gives learners the opportunity to see and discuss successes and failures of programmes from several different angles, including the:

- plant ecology
- nature of the site
- organisations involved
- practical skills required

Where possible, learners should practise the skills needed to maintain the case study sites. Ideally, you should teach ecological theory in the field, for example monitoring populations. You can back this up with online presentations or notes, and links to relevant journals and textbooks. Links with horticulture and conservation organisations and projects are key to enhancing the value of the unit and providing learners with connections and insights for the future.

The notional design length for the unit is 80 hours. However, the amount of time you allocate to each outcome is at your discretion.

We suggest the following distribution of time, including assessment:

Outcome 1 — examine the current state of global and local plant and habitat conservation
(20 hours)

Outcome 2 — relate wild and horticultural plant ecology to their successful conservation and cultivation
(20 hours)

Outcome 3 — implement and interpret an ecological survey
(40 hours)

You can integrate the unit with Advanced Plant Biology, Sustainability and Innovation, and Professional Practice: Horticulture, all at SCQF level 8.

Additional guidance

The guidance in this section is not mandatory.

Learners develop their plant identification skills as they survey wild plants. You can integrate this with assessment for Advanced Plant Biology at SCQF level 8.

Depending on the nature of the site that learners are working on, and the nature of their practice, you can integrate the unit with Professional Practice: Horticulture at SCQF level 8 and Sustainability and Innovation at SCQF level 8.

Content and context for the unit

Outcome 1

To achieve outcome 1, we recommend that learners analyse programmes including, but not limited to:

- species restoration
- habitat restoration
- urban biodiversity enhancement
- production for business
- other nature-based solutions

Programmes should be multi-organisational, to reflect the reality of conservation programmes.

Approaches to assessment

Case studies (all outcomes)

Learners should use case studies to explore real-life examples of plant conservation and ecology in action in the UK and globally.

You can assess learners on their ability to:

- analyse case studies from a range of plant and habitat conservations programmes in the UK and abroad, including both in-situ and ex-situ programmes
- assess reasons for the success or failure of a programme in terms of plant ecology, organisation, and its original aim
- demonstrate competent use of a key conservation skill

Learners can present their findings from a case study as a poster, a presentation or a report. They can demonstrate a skill live, on a blog, or in a presentation or other format.

Conservation plan (all outcomes)

Learners survey, research, evaluate, and make recommendations for the conservation and biodiversity enhancement of a site. The site could be urban, peri-urban or rural. It could be a site that is already designated for conservation, or one that could be a conservation site in theory. It does not need to be a site that is earmarked for conservation.

Learners should make recommendations for the management of the site to enhance conservation and biodiversity. They should produce a written report, as this is the industry standard, in which they:

- investigate the state of plant and habitat conservation on the survey site, including legislation and organisations relevant to the site
- survey their chosen site using a recognised professional ecological technique, such as a Phase 1 habitat survey, UKHabs, or NVC

At your centre's discretion, learners can produce a report or give an oral presentation with accompanying infographics, a podcast, a blog or other, in which they:

- assess the conservation value or potential of the site using recognised criteria, such as for designation of SSSI, LNR, NNR, and investigate the IUCN threat status of plants on their site
- produce a conservation plan, based on their survey and case study findings, to enhance biodiversity on the site and include an element of ex-situ conservation

Equality and inclusion

This unit is designed to be as fair and as accessible as possible with no unnecessary barriers to learning or assessment.

You should take into account the needs of individual learners when planning learning experiences, selecting assessment methods or considering alternative evidence.

Guidance on assessment arrangements for disabled learners and/or those with additional support needs is available on the assessment arrangements web page: www.sqa.org.uk/assessmentarrangements.

Information for learners

Ecological and Conservation Horticulture (SCQF level 8)

This information explains:

- what the unit is about
- what you should know or be able to do before you start
- what you need to do during the unit
- opportunities for further learning and employment

Unit information

This unit provides you with the knowledge and skills you need to work in the plant conservation industry. It focuses on plant ecology and how an understanding of plant ecology can help with planning and decision making in plant conservation and wider conservation.

Before starting the unit, you would benefit from having a foundation knowledge of plant conservation, ideally having completed Ecology and Environment for Horticulture at SCQF level 7, on which this unit expands.

On completion of the unit, you can:

1 examine the current state of global and local plant and habitat conservation
2 relate wild and horticultural plant ecology to their successful conservation and cultivation
3 implement and interpret an ecological survey

You can be assessed in various ways, such as through a portfolio of evidence, written report or oral presentation.

Throughout the unit, you develop meta-skills covering self-management, social intelligence and innovation.

On completion of the unit, and on achievement of the Higher National Diploma (HND), you can progress to the BSc in Horticulture. Alternatively, you may wish to apply directly to the horticulture industry and related work placements.

Administrative information

Published: September 2023 (version 1.0)

Superclass: QA

History of changes

Version	Description of change	Date

Note: please check SQA's website to ensure you are using the most up-to-date version of this document.