



**Arrangements for:
PDA in Ecological Surveying at SCQF
level 7**

Group Award Codes: GC3N 47

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Acknowledgement

SQA acknowledges the valuable contribution that Scotland's colleges have made to the development of Higher National qualifications.

History of changes

It is anticipated that changes will take place during the life of the qualification, and this section will record these changes. This document is the latest version and incorporates the changes summarised below.

Version number	Description	Date
03	Revision of Units. DN37 34 Ecology and Ecosystems has been replaced by H93A 34 Old unit will finish on 31/07/2017	19/06/15
02	Revision of Units: DK2K 34 Getting Started in Business has been revised by H7V4 34 Preparing to Start a Business and will finish on 31/07/2016.	13/01/15

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1 Introduction

This is the Arrangements Document for the new Group Award in Ecological Surveying, which was validated in May 2011. This document includes: background information on the development of the Group Award, its aims, guidance on access, details of the Group Award structure, and guidance on delivery.

2 Rationale for the development of the Group Award(s)

There were 3 major background factors influencing the development of this award:

- 1 The market shortage of competent ecological surveyors
- 2 The lack of a specific ecological surveying award covering the required competencies
- 3 The lack of ecological training/learning opportunities in Scotland

The demand for ecological surveyors has increased in Scotland post devolution as new heritage related legislation has been passed. In 2004, the Nature Conservation (Scotland) Act placed a duty on all public bodies and local authorities to “further the conservation of biodiversity” in Scotland and, more recently in 2004 and 2007, the Conservation (Natural Habitats &c.) Regulations were strengthened. These and other pieces of legislation are requiring more and more surveys of both national and European protected habitats and species.

This strengthening of environmental protection legislation comes at a time when the Scottish Government has a stated target of building at least 35,000 new homes a year by the middle of this decade (Firm Foundations: the future of housing in Scotland (Scottish Government 2007)). While there may be some downscaling because of public spending cuts, it is still vital for Scotland’s heritage that such expansion of settlements is achieved in the most sustainable way possible. The role of ecological surveyors in ensuring new developments are correctly planned and sited away from areas of heritage importance cannot be overstated. Without skilled surveyors, many areas of nature conservation and landscape importance may be lost to development for ever.

It is therefore important to the future heritage of Scotland that we equip more people in field survey skills as without them we will be unable to assess the environmental impacts of new developments, identify areas of high wildlife value for management and protection, or establish baselines from which to monitor changes to wildlife in the light of climate change. The skilled surveyors produced by this award will ultimately help provide information to planning authorities, Local Record Centres, the National Biodiversity Network and other environmental organisations.

Very few bodies in Scotland currently teach specialist practical ecological surveying skills to the level needed to produce highly competent surveyors. Much provision is through short modules delivered by either Field Studies Council centres or the Institute of Ecology and Environmental Management (IEEM). Short courses are useful for those already employed by the sector as a means of refreshing existing or adding new skills, but by their nature they do not provide the necessary depth, background and consolidation of skills required by new entrants wishing to gain a qualification and a comprehensive grounding in the subject over a longer period.

Training provided by colleges is often at an introductory level. Developing field skills demands time, which is not generally available on more generic diploma and degree courses. Students at colleges are, by the nature of the timetabling unable to receive training in practical ecological surveys during the summer months which is often the prime time for undertaking these activities.

With this in mind, this specialist and unique PDA is aimed firmly at those who are committed to pursuing a career in ecological surveying, either as a self employed surveyor or as a consultant.

The structure of the award can be grouped into 3 broad themes:

- ◆ Acquisition of background skills (e.g. ecology and identification skills)
- ◆ Acquisition of survey skills including use of new technology
- ◆ Acquisition of business skills

All these skills are required by the ecological surveyor. All Units need to be successfully completed in order to achieve the award.

However, elements of the new award, particularly the new Data Management for Ecological Surveying Unit could form part of a more general college based Countryside/Conservation Management award as keeping abreast of technological advances in GIS could be considered a useful competency for countryside managers.

3 Aims of the Group Award(s)

3.1 General aims of the Group Award(s)

This award aims to address the persistent shortage of high quality ecological surveyors in Scotland.

The aim of this PDA is to develop a high quality specialist survey qualification which allows participants to work towards a meaningful professional award from a nationally recognised awarding body.

Scottish Wildlife Trust (SWT) commissions surveyors to undertake surveys on their nature reserves and they have first-hand experience of the struggle to secure the services of good people. Because of the limited pool of suitable surveyors they regularly need to approach surveyors up to 12 months in advance of any given survey. Other environmental organisations are in exactly the same position, thus clearly demonstrating the need for such skills, even in the current downturn. SWT has received a number of letters of support from other environmental organisations in connection with their HLF bid, many of whom have reiterated this same opinion;

John Muir Trust ‘the John Muir Trust has struggled to find suitably experienced ecological surveyors’

National Trust for Scotland ‘your project will undoubtedly address an existing shortage of skilled surveyors and I am certain that we will have work for successful trainees’

Scottish Native Woods ‘I believe that this project will help address a skills shortage.....look forward to being able to make use of the increased pool of surveyors that will result’

Woodland Trust Scotland ‘It can be difficult to employ a good ecological surveyor’

There is also documented evidence from the IEEM in its advice to education professionals ‘there is a very large number of undergraduate courses available to an applicant considering moving in to the ecology and environmental management area of work...in recent years it has become apparent that there is a shortage of people entering the profession with appropriate field skills’.

It is possible that some candidates with the award would be encouraged to go on to develop specialist knowledge of particular taxonomic groups in their careers. A House of Lords Select Committee on Taxonomy and Systematics (21st July 2008) highlighted increasing concern about the declining number of specialist taxonomists in the UK by concluding that ‘the state of systematic and taxonomy in the UK, both in terms of the professional taxonomic community and volunteers, is unsatisfactory – in some areas, such as mycology, to the point of crisis – and that more needs to be done to ensure the future health of the discipline’.

The ecological survey PDA will provide the right award to generate competent new entrants to the job market, particularly in the self employed sector. These would create sustainable jobs that would retain new skills in the sector and help address the current skills shortage.

3.2 Specific aims of the Group Award(s)

The PDA in Ecological Surveying will:

- 1 develop specific up to date survey knowledge
- 2 develop new survey skills including developments in data management skills
- 3 meet a skills gap identified by the sector
- 4 develop business skills

3.3 Target groups

Due to the vocationally focused nature of this Award it is aimed firmly at candidates who are committed to pursuing a career in ecological surveying. This could include school leavers, college or university graduates and those seeking a career change.

3.4 Employment opportunities

It is expected that the main employment opportunity will be as an Environmental Surveyor, whether as a self-employed surveyor or on a consultancy basis.

4 Access to Group Award(s)

Access to the PDA will be at the discretion of the delivering centre.

- ◆ Prior knowledge and skills — Candidates would benefit from a background in or some prior knowledge of ecological surveying. This could then be developed during progression through the award.
- ◆ Formal qualifications — Any formal qualification or transferable skills relevant to this award would be useful.
- ◆ This PDA will require a good level of written and analytical skills. Candidates with prior report writing skills or those who can develop these skills would be better able to bridge the particular demands of this programme.

5 Group Award(s) structure

The Group Award consists of seven Higher National Units, all of which are mandatory. The award contains six Units at SCQF Level 7 and one at SCQF Level 8. Overall the awards consists of 56 SCQF Credit Points at SCQF Level 7.

This PDA will be achieved on successful completion of all 7 Units as detailed below:

5.1 Framework

Unit title	Code	SCQF credit points	SCQF level	SQA credit value
Ecological Surveying	F433 35	8	8	1
Ecology & Ecosystems	H93A 34*	8	7	1
Environmental & Countryside Regulation	F2GC34	8	7	1
Classification & Identification of Organisms	F3X2 34	8	7	1
Preparing to Start a Business*	H7V4 34*	8	7	1
Geographic Information Systems	F502 34	8	7	1
Data Management for Ecological Surveying	FM44 34	8	7	1

5.2 Mapping information

Mapping of PDA Units to relevant National Occupational Standards:

Unit	Element	EC2 – Survey & report on the condition of the environment		EC23 – Prepare, conduct and report on field surveys		
		Collect & record data on the natural environment	Report & record data on the natural environment	Prepare for field surveys	Collect & record data through field surveys	Interpret survey data & report on findings
Ecological Surveying	Explain the principles & procedures of surveying vegetation & habitats			✓		
	Analyse the principles & applications of surveying animal populations			✓		
	Carry out & report an ecological survey	✓	✓		✓	✓
GIS	Survey & process digital map data for inclusion in GIS	✓				
	Geocode data tables to digital map data					
	Use GIS software to display data					✓
Classification & Identification of Organisms	Explain systems used in classification, identification & naming of organisms					
	Apply techniques, skills & wider resources to present information about species					
Ecology & Ecosystems	Describe key ecological principles					
	Describe factors affecting the development of selected ecosystems					
	Perform and ecological investigation					
Getting started in Business	Assess individual personal qualities in the context of set up					
	Evaluate the benefits of being self employed					
	Develop a business plan					
Environmental & Countryside Regulation	Describe the process of making & implementing environmental & countryside law					
	Identify & describe key principles relating to the environment & activities in the environment					
	Describe key roles of statutory & non statutory organisations in protecting the countryside & environment					
Data Management for Ecological Surveying	Design a system for managing ecological survey data					
	Collect data digitally direct into GIS using in field technology	✓			✓	
	Interrogate data & provide reports suitable for ecological assessment		✓			✓

5.3 Articulation, professional recognition and credit transfer

APL and APEL:

Candidates who can prove prior knowledge either through previously completed SQA Units and/or Awards or through training courses run by professional organisations such as IEEM or Field Studies Council may be eligible for Accreditation of Prior Learning (APL) or Accreditation of Prior Experiential Learning (APEL). These will be examined on an individual basis by the assessor.

Progression

The PDA in Ecological Surveying would link well with other related programmes of study at Universities or Further Education colleges. There would be some overlap with existing SQA awards, most notably courses of study involving Ecology & Ecosystems, Environmental & Countryside Regulation and Classification & Identification of Organisms Units.

The PDA is a specialist award designed to develop highly vocational knowledge and skills and as such will allow successful candidates to seek employment within relevant areas, however candidates may also wish to progress to other qualifications.

Examples of possible progression routes are detailed below:

SCQF Level 8

- ◆ HND Rural Resource Management*
- ◆ HND Countryside Management*
- ◆ HND Environmental Management and Sustainability*

SCQF Level 10

- ◆ Wildlife Management BSc (Hons)
- ◆ Environmental Science BSc (Hons)
- ◆ Environmental Stewardship BSc (Hons)

SCQF Level 11

- ◆ Environmental Sustainability MA (Hons)

* Units from the PDA can contribute towards the above HNDs.

6 Approaches to delivery and assessment

Assessment could be undertaken by an assessor/ecologist who could deliver much of the training as well as assessment of the award. In addition, other assessors or trainers with specialist knowledge could deliver training in various specialist components of the PDA.

Assessments will be composed of work based projects, reports or tests. Ideally, as much assessment as possible should be applied to the actual work of the ecological surveyor. This should help keep classroom-based learning to a minimum and allow a reasonable allocation of time to field based work examples. This will also keep the focus on the end product (ie producing competent field ecologists) rather than on the process (completing the required learning outcomes).

Possible integration of assessment/delivery within PDA in Ecological Surveying							
Unit	Data Management for Ecological Surveying	Geographic Information Systems	Ecological Surveying	Classification & Identification of Organisms	Ecology & Ecosystems	Environmental & Countryside Regulation	Getting Started in Business
Data Management for Ecological Surveying		✓	✓	✓			
Geographic Information Systems	✓		✓	✓			
Ecological Surveying	✓	✓		✓			
Classification & Identification of Organisms	✓	✓	✓				
Ecology & Ecosystems							
Environmental & Countryside Regulation							
Getting Started in Business							

The table above shows the possibilities for integration of assessment so that production of a survey report as part of the Ecological Surveying Unit for example could cover a number of elements within a number of other Units. Integration of assessment would mean that key pieces of work such as survey reports would provide evidence towards a number of Units.

Some Units, such as Getting Started in Business could be assessed as a stand alone Unit as it is clearly a separate area of competence. However, opportunities for integration of assessment within these Units should still be sought as it would reduce the burden of assessment for both candidates and assessors.

The Classification & Identification of Organisms Unit is a building Unit that feeds into the Ecological Surveying Unit, whilst the Data Management for Ecological Surveying builds on the Geographic Information Systems Unit. It makes sense to deliver, assess and achieve the ‘foundation’ Units of the award first namely Ecology & Ecosystems and Classification & Identification of Organisms before moving on to the field based survey Units. However much depends on the time of year when the PDA is first undertaken; if candidates start in winter then there is little sense in

undertaking field based work. However, the converse is true and there is no point wasting the survey season by undertaking office based or non survey related topics.

It is expected that this award could take up to 18 months to deliver on a full time basis. Although many elements may be assessed by production of written and/or recorded oral reports and responses to short or extended response questions, much of the actual survey assessment would be best carried out in situ using direct observation and questions/answers. Elements of the award could in theory be delivered by distance learning and assessed by e-assessment.

It is possible to account for individual needs of candidates within the delivery of the award, particularly the classroom based element. Where candidates need extra help or support this can be provided for example extra time allowance for written course assessments or course notes printed on different coloured paper. Allowance will be made for learners with dyslexia. Prior to extra arrangements being put in place, evidence of need and how this affects the learning process should be provided.

	Season for delivery	Possible order of delivery (assuming a January start)	
Data Management for Ecological Surveying	Spring/summer	4-5	It is expected that two survey seasons would be required to gain competence in this Unit
Geographic Information Systems	Spring/summer	4-5	
Ecological Surveying	Spring/summer	4-5	It is expected that two survey seasons would be required to gain competence in this Unit
Classification & Identification of Organisms	Spring/summer	3-4	It is expected that two survey seasons would be required to gain competence in this Unit
Ecology & Ecosystems	Autumn/winter	1	
Environmental & Countryside Regulation	Autumn/winter	2 or 6	
Getting Started in Business	Autumn/winter	7	

7 General information for centres

Candidates with disabilities and/or additional support needs

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering alternative Outcomes for Units. Further advice can be found in the SQA document *Guidance on Assessment Arrangements for Candidates with Disabilities and/or Additional Support Needs* (www.sqa.org.uk).

Internal and external verification

All instruments of assessment used within this/these Group Award(s) should be internally verified, using the appropriate policy within the centre and the guidelines set by SQA.

External verification will be carried out by SQA to ensure that internal assessment is within the national guidelines for these qualifications.

Further information on internal and external verification can be found in *SQA's Guide to Assessment and Quality Assurance for Colleges of Further Education* (www.sqa.org.uk).

8 General information for candidates

The PDA in Ecological Surveying is designed to provide you with the competencies required in order to enter the field of ecological surveying.

This unique SQA award will provide you with the necessary ecological theory, identification skills and field surveying methodologies, combined with familiarity with the latest GIS technology and an awareness of suitable business skills to become ready to enter the marketplace as an ecological surveyor.

To achieve the award you will need to prove your competency in a range of survey skills, including

- ◆ Knowledge of ecological processes
- ◆ Identification of a wide range of species including higher & lower plants, birds, mammals, invertebrates, reptiles/amphibians
- ◆ Familiarity with the established survey techniques and methodologies including Phase 1 & NVC
- ◆ Use of latest technology to gather and manage data
- ◆ Ability to process and produce industry standard reports using survey data
- ◆ Ability to inform decision makers regarding surveyed sites including knowledge of latest environmental laws and regulations relating to planning and other matters
- ◆ Ability to succeed in the commercial world through awareness of business, writing tender documents, business plans, management of finance including the option of self employment.

To achieve the award you will be assessed through: open book tests, closed book tests, assignments, report writing, questioning, observation. You will undertake both group projects and assessments requiring self study.

In addition to the skills above you will also have the opportunity to develop:

- ◆ enterprise skills
- ◆ technology skills
- ◆ analytical skills
- ◆ business skills
- ◆ project management skills
- ◆ learning and study skills
- ◆ planning skills
- ◆ evaluative skills

You will also have an opportunity to develop the following core skills:

- ◆ Communication
- ◆ Numeracy
- ◆ ICT
- ◆ Problem solving
- ◆ Working with others

You will be encouraged to learn from other members of the training group, led by the teacher/ecologist in a real work environment, where real ecological data will be used to inform day- to-day management of wildlife reserves and other important wildlife sites.

9 Glossary of terms

SCQF: This stands for the Scottish Credit and Qualification Framework, which is a new way of speaking about qualifications and how they inter-relate. We use SCQF terminology throughout this guide to refer to credits and levels. For further information on the SCQF visit the SCQF website at www.scqf.org.uk

SCQF credit points: One HN credit is equivalent to 8 SCQF credit points. This applies to all HN Units, irrespective of their level.

SCQF levels: The SCQF covers 12 levels of learning. HN Units will normally be at levels 6–9. Graded Units will be at level 7 and 8.

Subject Unit: Subject Units contain vocational/subject content and are designed to test a specific set of knowledge and skills.

Graded Unit: Graded Units assess candidates' ability to integrate what they have learned while working towards the Units of the Group Award. Their purpose is to add value to the Group Award, making it more than the sum of its parts, and to encourage candidates to retain and adapt their skills and knowledge.

Dedicated Unit to cover Core Skills: This is a non-subject Unit that is written to cover one or more particular Core Skills.

Embedded Core Skills: This is where the development of a Core Skill is incorporated into the Unit and where the Unit assessment also covers the requirements of Core Skill assessment at a particular level.

Signposted Core Skills: This refers to the opportunities to develop a particular Core Skill at a specified level that lie outwith automatic certification.

Qualification Design Team: The QDT works in conjunction with a Qualification Manager/Development Manager to steer the development of the HNC/HND from its inception/revision through to validation. The group is made up of key stakeholders representing the interests of centres, employers, universities and other relevant organisations.

Consortium-devised HNCs and HNDs are those developments or revisions undertaken by a group of centres in partnership with SQA.

Specialist single centre and specialist collaborative devised HNCs and HNDs are those developments or revisions led by a single centre or small group of centres who provide knowledge and skills in a specialist area. Like consortium-devised HNCs and HNDs, these developments or revisions will also be supported by SQA.