



## CURRICULUM VITAE

FIONNUALA H. O'NEILL

B.Sc. (Hons.), Dip. Comp. Sc., H. Dip. Appl. Sc., Ph.D., MCIEEM

### EDUCATION

- 1997 – 2003 University College Cork  
Ph.D. Thesis title: “Regeneration of native oak woodland following *Rhododendron ponticum* L. clearance from Glengarriff Woods Nature Reserve, Co. Cork, Ireland”
- 1996 – 1997 University College Cork  
H. Dip. in Applied Science (1<sup>st</sup> class Honours)
- 1989 – 1990 University College Cork  
Dip. in Computer Science (1<sup>st</sup> class Honours)
- 1985 – 1989 University College Cork  
B.Sc. in Plant Science (2.1 Honours Degree)

### CAREER HISTORY

**Principal Ecologist/Director of Ecology, BEC Consultants**

Dec 2016-present

**Consultant/Senior Ecologist, BEC Consultants**

Apr 2007-Dec 2016

**Contract Ecologist, BEC Consultants**

Apr-Sep 2005, May-Sep 2006

Since joining BEC Consultants I have worked extensively on a number of high-profile national habitat surveys. As a Director of Ecology with BEC I have responsibility for company development and for managing team members and I sit on senior management meetings. I have managed a range of projects and am a highly experienced botanist and bryologist, having worked in a wide variety of Irish habitats. I also have excellent report-writing and editing skills. I have responsibility for the design and population of project Access databases, and for compiling metadata to an agreed standard for projects in which I am involved. I have devised and taught botany/ecology courses for diverse groups of people, many of whom are non-botanists. A selection of projects I have worked on with BEC is listed below:

- *Pilot Fen Survey, 2019-ongoing* – Senior ecologist. This one-year pilot project, due to finish in 2020, is developing survey and assessment methodology for three Annex I fen habitats using seven fens as test sites. I am involved at all stages of the project, from drafting the methodology to field testing and reporting.
- *Preparation of Coillte Biodiversity Area Management Plans, 2019* – Woodland ecologist. I worked with Coillte staff and private foresters to prepare management plans for Coillte properties selected as areas with high biodiversity potential. Ecologists and foresters collaborated to draw up plans that utilise the latest methods in forest management to protect and enhance woodland biodiversity at all levels. As ecologist, part of my role was to discuss options with the forester, to approve or suggest amendments to any operations proposed, and to draw up the final report, including any maps. I produced 15 Biodiversity Area Management Plans and I also completed a Native Woodland Scheme application as part of this project, in collaboration with one of the project foresters.
- *NPWS Article 7 support, 2019* – External consultant. In 2019 I was contracted by National Parks & Wildlife Service (NPWS) to assist in the timely delivery of the Article 17 outputs from Ireland to the EU. This involved proof-reading and collating the individual Annex I habitats and Annex II/V species accounts into two separate volumes and assisting with the production of the summary publication. The project entailed a 14-week secondment to NPWS's offices at North King Street. The Article 17 submission from Ireland was the first to be received by the EU Commission in 2019.
- *Monitoring of Rare Plants, 2015-2018* – Project manager. The eight target species of this three-year project required specialist surveys to be carried out to assess the state of their populations and the

condition of, and threats to, their habitats. The results of the project fed directly into international reporting required under Article 17 of the EU Habitats Directive. A range of habitats were surveyed, ranging from coastal to upland. In 2018 I wrote the final project Irish Wildlife Manuals and National Conservation Assessment reports for the Annex II species *Saxifraga hirculus*, each of the individual Annex V clubmoss species, and the *Lycopodium* spp. group collectively.

- *Woodland Monitoring Survey (WMS), 2011-2012 and 2017-2018* – Project manager/Lead ecologist (2011-2012), Field ecologist (2018). In 2011-2012 I had overall responsibility for this project for NPWS, which involved monitoring 101 sites with the Annex I habitats 91E0 *Alluvial forests* and 91A0 *Sessile oak woods* as part of Ireland's obligations under Article 17 of the EU Habitats Directive. I refined the assessment criteria for both habitats, co-wrote the survey methodology, organised field teams, conducted field surveys and data analysis for the assessments, and was lead author on the final report. In 2017-2018, two additional Annex I habitats were included in the survey: 91D0 Bog woodland and 91J0 Yew woodland. I conducted field surveys in 2018.
- *People's Millennium Forest surveys 2009 and 2019* – Senior Ecologist. This long-term monitoring project examines succession in woodland from clear-fell to established woodland. Transects established in 2003 have, to date, been resurveyed twice – once in 2009 and again in 2019. Each transect consists of contiguous 40 quadrats, 5x5m in size. The project is providing valuable insights into the successional processes in woodlands. I completed recording in a transect in Sligo in 2009 and in Kilkenny in 2019.
- *LUCAS, 2016 & 2018* – External grassland expert/Senior Ecologist. The LUCAS survey is carried out every 3 years by EUROSTAT to determine the state and dynamics of changes in land use and cover in the European Union. I participated in this project as an external grassland consultant and attended the European grassland expert workshop to discuss and finalise data inputs and criteria required for the LUCAS grassland pilot, to be incorporated into the 2018 LUCAS survey, including lists of indicator species for the Atlantic biogeographic region, structural parameters for assessing the grassland, and recommended timing of the survey. In 2018 I carried out grassland surveys in Ireland and the UK using criteria I helped to develop for a pilot grassland module under LUCAS.
- *Juniper Monitoring Survey, 2017* – Project manager/Senior Ecologist. Annex I habitat 5130 Juniper formations were monitored in this survey, which revisited a subset of sites first surveyed in 2010. Assessment criteria were reviewed and revised where necessary before surveys commenced. During each site survey, changes to the habitat boundary were mapped, data for assessing the habitat were recorded, juniper populations were estimated and any impacts were noted. I completed the National Conservation Assessment report for habitat 5130 based on the results of this survey.
- *SAMFHIREs 2016-2018* – Senior ecologist and Work Package 3 supervisor. This project was a 3-year collaboration between BEC Consultants and the Department of Botany, Trinity College Dublin. The project linked anthropogenic pressures to changes in saltmarsh communities and investigated the ecosystem services and ecological functions of saltmarshes in Ireland. I was involved with field surveys, data analysis and preparation of the final project synthesis report.
- *Grassland Monitoring Survey, 2015-2018* – Senior Ecologist. This nationwide survey monitored up to 100 grassland sites, first surveyed during the Irish Semi-natural Grasslands Survey (see below), containing the Annex I habitats 6210 Calcareous grassland, 6410 *Molinia* meadows and 6510 Lowland hay meadows. I was involved with field surveys and site assessments and was co-author of the final Irish Wildlife Manual.
- *Survey of Potential Turlough Sites, 2015* – Project manager. Turloughs are a distinctive feature of the landscape of the west of Ireland. This project involved visiting 180 potential turloughs and assessing whether or not they were turloughs based on the presence (or absence) of characteristic features and vegetation.
- *Preparation of appropriate assessment reports, 2015-ongoing* – Senior Ecologist. Since 2015 I have prepared a number of ecological reports for clients undertaking a range of developments. These include appropriate assessment screening reports, Natura Impact Statements and Ecological Impact Assessment reports which generally involve preparatory desk survey work, field survey and consultation with the client regarding the nature of the development and its likely impacts.

- *Irish Semi-natural Grasslands Survey (ISGS), 2008-2013* – Lead Ecologist. During this major nationwide survey completed on behalf of NPWS, I surveyed more than 250 grassland sites over five years. I undertook pre-survey site selection, which involved aerial photograph interpretation and consultation with landowners, NPWS conservation staff and local authority staff. Site surveys entailed landowner liaison, recording of vascular plant and bryophyte species, mapping of habitats, recording of relevés and details of ongoing management / impacts on the habitats, and condition assessment of Annex I habitats. I helped train new field staff on the field methodology and grassland plant species as necessary. I was lead author of several of the annual reports and of the final project report. I also redesigned the MS Access database for the project and managed its data population.
- *Great Island Channel SAC survey, 2014* – Senior Ecologist. This project required the survey and assessment of Annex I habitats in the Great Island Channel SAC, Cork. I undertook the field survey and mapping of the saltmarsh habitats, and was lead author on the final report.
- *Galway City Transport Project, 2014* – Senior Ecologist. This second phase of the Galway City Outer Bypass project involved a number of tasks. These included the identification of potential petrifying springs in the study area using GIS and aerial photograph interpretation, followed by the survey, mapping and description of the petrifying spring habitats found; the detailed description and assessment of Annex I and non-Annex habitats within the study area, which covered 4 km<sup>2</sup>; and the recording of almost 300 relevés in a range of habitats such as limestone pavement, transition mire, fen, *Cladium* swamps, wet and dry woodland, and calcareous grassland. I also contributed significantly to the considerable GIS component of this project, in which over 1600 polygons were individually digitised and characterised to vegetation community.
- *Galway City Outer Bypass, 2013* – Field Ecologist. During this scoping project for a proposed road development, I recorded relevés and mapped and assessed the Annex I habitats \*8240 *Limestone pavement* and 6210 *Calcareous grassland*.
- *Waterford Habitat Corridors Map, 2013* – Project Manager. This project was aimed at assessing the occurrence and connectivity of mammal habitat in Co Waterford. My main duties were tendering for the project, liaising with the client, compiling existing mammal records and habitat data, conducting fieldwork and writing the final report.
- *National Conservation Assessments (NCAs), 2013* – Senior Ecologist. I was responsible for compiling reports for two EU Annex I woodland habitats: 91A0 *Sessile oak woods* and 91E0 *Alluvial forests*. I also assisted in the compilation of NCA reports for four Annex I grassland habitats. My work involved the analysis of large-scale ecological datasets to compile an up-to-date distribution map for each of the habitats, assessing the condition of the habitats on a national scale, identifying the most significant impacts, and calculating the national range and area of the habitats using GIS.
- *Ecological Survey of the Royal Canal, 2013* – Field Ecologist. This project entailed an ecological survey of the Royal Canal between Talbot Bridge, Dublin and Maynooth train station, Kildare. I was primarily involved with the collection of vascular plant and bryophyte data and with the field survey and digital mapping of all habitats within a section of the survey area.
- *National Survey of Native Woodlands (NSNW), 2005-2008* – Field Ecologist/Team Leader. I was a key contributor to this major nationwide ecological survey for NPWS, undertaking a large number of woodland surveys over several years. I was also responsible for bryophyte identification, data analysis and MS Access database management, and was a co-author on the final report.
- *Digitisation of the National Survey of Native Woodland sites, 2010* – Project Leader. I had overall responsibility for this project for NPWS which involved the review and digitisation of site/habitat maps and relevés from the NSNW using ArcGIS.
- *Ballyseedy Wood Management Plan, 2008* – Project Manager. This project for Kerry County Council required the writing of a management plan for a cSAC near Tralee that contained substantial areas of the Annex I habitat 91E0 *Alluvial forests*. My work involved a detailed survey of the site, meetings with the local committee, formulating management recommendations and writing the management plan.

- *Botany Courses, ongoing since 2007* – Training provider. I have devised and run a number of courses on botany and plant chemistry for private groups. I have also delivered plant and habitat courses for the National Biodiversity Data Centre and the Chartered Institute of Ecology and Environmental Management (CIEEM), and I am an approved CIEEM trainer. I tailor my courses to the needs and interests of the groups themselves. For example, I am a training provider to foresters undertaking the National Forest Inventory in 2020-22, a role I also fulfilled in 2016. The course covers basic techniques for the identification of vegetation, with a particular focus on grass and sedge species, as well as instruction on the use of identification keys and a fieldwork element to identify species *in situ*.

#### **Ecologist, WS Atkins**

Jan-Mar 2006, Oct 2006-Mar 2007

My work here included habitat survey, mapping, site evaluation, impact assessment and recommendation of mitigation measures, report-writing and preparation of habitat/botanical sections of Environmental Impact Statements, route selection reports and constraints studies. The projects I worked on include:

- Amenity Area at Cardiffsbridge Park/Tolka River
- Saggart-Rathcoole-Newcastle Drainage Scheme
- Youghal Housing Development
- R132 Malahide Road Upgrade/By-pass
- Mountmellick By-pass
- Watergrasshill By-pass
- Bottlehill Landfill Site

#### **Course Co-ordinator, University College Cork**

Sep 2004-Jan 2005

I co-ordinated distance learning courses in Field Ecology (Diploma) and Biodiversity Components of Forestry (Certificate); other duties included project supervision and assessment.

#### **Occasional/Part-time lecturer, various employers**

Oct 1999-Apr 2007

I participated in teaching on university degree and diploma courses (primarily night programmes for mature students), including modules in biodiversity and conservation, plant structure/evolution, and a varied range of habitats such as bogs, fens, turloughs and woodlands. I conducted field trips in a variety of habitats, including woodlands, sea shore and bogs. In addition I lectured on botany and plant chemistry and taught plant identification skills to student medical herbalists, many of whom were beginners to the field of botany.

#### **Computer Instructor, Nyumba ya Sanaa, Dar es Salaam, Tanzania**

Apr 1995-Jul 1996

This was a volunteer overseas posting under the auspices of Agency for Personal Services Overseas (APSO). I instructed staff (mostly beginners) in the use of computers and computer applications such as WordPerfect and Lotus 1-2-3, and facilitated the transfer of their manual accounts to computer.

#### **Computer Programmer/Analyst, Kerry Group, Tralee**

Aug 1990-Jan 1995

My duties included maintenance and support of existing in-house software (COBOL and SQL/Oracle database, Unix shell script programming, DOS/Unix-based operating systems), programming of new modules, network administration (1994-95), provision of technical support to staff on all aspects of IT, including word processing (WordPerfect) and spreadsheet (Lotus 1-2-3) packages.

### **SKILLS & ADDITIONAL INFORMATION**

#### **Species and habitat identification skills**

- Excellent plant identification skills, including vascular and bryophyte species.
- Experience in identifying carabids (ground beetles) and butterflies to species; other invertebrate groups, including spiders and non-carabid beetles, identified to family.
- In-depth knowledge of a range of EU Habitats Directive Annex I habitats in Ireland, including grassland and woodland habitats.

#### **Communication and interpersonal skills**

- Excellent report-writing skills.
- Public speaking experience through presentation of papers at national and international conferences.

- Teaching skills acquired in the course of lecturing both to mature students and to younger undergraduates. Most of my lectures are to those with little or no knowledge of botany or ecology, where it is particularly important to explain basic concepts and put information across in an understandable format.
- I work successfully as an individual and as a leader, and have trained a number of ecologists in woodland and grassland surveying and plant species identification.
- I work well within a team, having worked on major team-driven projects during my time as a computer programmer, and latterly in the course of my time with BEC Consultants.

### **Computer skills**

- Experienced and highly proficient in the use of MS Word, Excel, PowerPoint and Access, and ArcMap GIS software. I am also familiar with MapInfo and QGIS.
- High level of proficiency in database design and population, data analysis, accurate data entry and GIS mapping.
- Excellent working knowledge of Turboveg botanical recording software.
- My former work as a computer programmer/analyst has trained me in logical skills that can be carried forward to newer computer applications.

### **Driving**

- Full, clean driving licence; own vehicle.

### **Conference/Workshop presentations**

- *Get to grips with grasslands! Classifying grassland habitats.* Workshop at the National Biodiversity Data Centre, Waterford, June 2019.
- *Update on the conservation status of six rare vascular plants.* Presentation at the Irish BSBI Members' Conference, Dublin, March, 2019.
- *The Vascular Plant Red List.* Presentation at the Irish BSBI Members' Conference, Dublin, March 2017.
- *The Irish Semi-natural Grasslands Survey: What have we learned?* Presentation at the Irish BSBI Members' Conference, Dublin, March 2014.
- *A proposed new classification system for Irish grassland communities.* Presentation at ESAI's ENVIRON Conference, Dublin, February 2014.
- *Classification of Irish semi-natural grasslands.* Workshop at the National Biodiversity Data Centre, Waterford, June 2013.
- *High nature value meadows: results from a national grassland survey.* Presentation at the Teagasc Biodiversity Conference *Conserving Farmland Biodiversity: Lessons learned & future prospects*, Wexford, May 2011.
- *An assessment of the conservation value of Irish woodlands.* Presentation at the British Ecological Society Conference, London, June 2008.
- *Collateral damage to native woody species arising from the control of Rhododendron ponticum.* Presentation at the 7<sup>th</sup> Regional Biodiversity Conference and International Conference: *The Ecology and Management of Rhododendron ponticum - an invasive alien or a neglected native?*, Sheffield, June 2004.

### **CPD courses delivered**

- *Vegetative Grass ID:* CIEEM training course delivered in May 2015.
- *Introduction to Grasses, Sedges & Rushes:* CIEEM training course delivered in July 2014.
- *Introduction to Botany:* Training course delivered to private group in March 2013.

### **CPD courses attended**

- Native Woodland Scheme (Woodlands of Ireland/Forest Service, 2018).
- Train the trainers (IEEM, 2013).
- Advanced bryophytes (FSC, 2012).
- *Sphagnum* species (Denyer Ecology, 2011).
- Sedge identification (IEEM, 2010).
- Vegetative grass identification (IEEM, 2008).

## Membership of professional organisations

- Chartered Institute of Ecology and Environmental Management (CIEEM) (Full member). Membership requires adherence to a professional code of conduct and commitment to a programme of continuing professional development.
- Botanical Society of the British Isles (BSBI) (Ordinary member).
- British Bryological Society (Ordinary member).

## SELECTED PUBLICATIONS & REPORTS

- Barron, S.J., **O'Neill, F.H.** & Martin, J.R. (2014) Galway City Transport Project – Habitat mapping and assessment of a section of Lough Corrib SAC and surrounding areas. Report for Scott Cawley.
- Martin, J.R. & **O'Neill, F.H.** (2011) High nature value meadows: results from a national grassland survey. In: (eds. D. Ó hUallacháin & J. Finn) Proceedings of the Biodiversity Conference *Conserving Farmland Biodiversity: Lessons learned & future prospects*, 25-26 May 2011, Wexford. pp. 28-29. Teagasc, Carlow.
- Martin, J.R., **O'Neill, F.H.** & Daly, O.H. (2018) The monitoring and assessment of three EU Habitats Directive Annex I grassland habitats *Irish Wildlife Manuals*, No. 102. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland.
- O'Neill, F.** (2009) *Calypstrochaeta apiculata* (Southern Hookeria): first Irish record confirmed in Co. Cork. *Field Bryology* **98**, 28-29.
- O'Neill, F.H.** (2017) Identifying grassland habitats of conservation interest in Ireland. *In Practice* **96**:8-13.
- O'Neill, F.H.** & Barron, S.J. (2014) Galway City Transport Project: Report on the presence of Annex I habitat \*7220 Petrifying springs with tufa formation. Report for Scott Cawley.
- O'Neill, F.H.** & Barron, S.J. (2013) Results of a monitoring survey of old sessile oak woods and alluvial forests. *Irish Wildlife Manuals*, No. 71. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Ireland.
- O'Neill, F.H.** & Martin, J.R. (2015) Summary of findings from the Survey of Potential Turloughs 2015. Unpublished report for National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin.
- O'Neill, F.H.** & Martin, J.R. (2017) The Irish Juniper Monitoring Survey 2017. *Irish Wildlife Manuals*, No. 101. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland.
- O'Neill, F.H.**, Brophy, J.T., Devaney, F.M., Nash, R. & Barron, S.J. (2014) Assessment of the Conservation Status of the Great Island Channel SAC (001058). Report for Cork County Council.
- O'Neill, F.H.**, Hodd, R.L. and Long, M.P. (2019) Results of a monitoring survey of the Annex II species *Saxifraga hirculus* (Marsh Saxifrage) in Ireland 2015–2018. *Irish Wildlife Manuals*, No. 112. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland.
- O'Neill, F.H.**, Long, M.P. & Hodd, R.L. (2020) Monitoring of the Annex V Clubmoss group (*Lycopodium* spp.) in Ireland 2015-2018. *Irish Wildlife Manuals*, No. 117. National Parks and Wildlife Service, Department of Culture Heritage and the Gaeltacht, Ireland.
- O'Neill, F.H.**, Perrin, P.M. & Barron, S.J. (2008) Ballyseedy Wood: A 50-year management plan. Report for Kerry County Council.
- O'Neill, F.H.**, Martin, J.R., Devaney, F.M. & Perrin, P.M. (2013) Irish Semi-natural Grasslands Survey 2007-2012. *Irish Wildlife Manuals*, No. 78. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Ireland.
- Penk, M.R., Perrin, P.M., Kelly, R., **O'Neill, F.** & Waldren, S. (2019) Plant diversity and community composition in temperate northeast Atlantic salt marshes are linked to nutrient concentrations. *Applied Vegetation Science* **2019;00**:1–11. <https://doi.org/10.1111/avsc.12459>
- Perrin, P., Martin, J., Barron, S., **O'Neill, F.**, McNutt, K. & Delaney, A. (2008) National Survey of Native Woodlands 2003-2008 (2 Volumes). Report for the National Parks and Wildlife Service.
- Schindler, S., **O'Neill, F.H.**, Biró, M., Damm, C., Gasso, V., Kanka, R., van der Sluis, T., Krug, A., Lauwaars, S.G., Sebesvari, Z., Pusch, M., Baranovsky, B., Ehlert, T., Neukirchen, B., Martin, J.R., Euller, K., Mauerhofer, V. & Wrbka, T. (2016) Multifunctional floodplain management and biodiversity effects: a knowledge synthesis for six European countries. *Biodiversity and Conservation* **25**:1349-1382.