

Curriculum Vitae

Aileen Byrne BA, H.Dip.



Profession

Environmental Scientist

Position with firm

Environmental Scientist

Years of Experience

1.5

Educational Qualifications

- Higher Diploma in Environmental Science, University of Limerick (First Class Honours), 2022
- BA Hons. Geography & Information Technology, National University of Ireland, Galway, 2021
- Work in Wind, Wind Energy Ireland & GTSkillnet, Sept. – Nov 2022
- Alive Certificate, 2018 – 2019, Awarded for volunteering work completed in University
- WindPRO Solar PV Course, EMD International, April 2024

KEY HIGHLIGHTS

Aileen is an honours graduate of the Environmental Science Higher Diploma course from the University of Limerick. She has a keen interest in sustainable energy in Ireland, both present and future applications. Aileen most recently completed the "Work in Wind" course with Wind Energy Ireland and GTSkillnet to improve her knowledge of sustainable renewables and she hopes to apply this knowledge in the sector. Aileens skills include Public Speaking, Interpersonal Skills and Communication, Attention to detail, Critical thinking, Active listening, Mentoring, Leadership, Teamwork, Problem-Solving and Decision Making.

EXPERIENCE

September 2022 – Present

Jennings O'Donovan & Partners Limited, Sligo

Since joining JOD, Aileen has worked as Junior Environmental Scientist on the following projects:

- Inchamore Wind Farm, Co. Cork (33MW)
- Killala Hydrogen Plant and Energy Centre, Co. Mayo (200MW)
- Tirawley Wind Farm, Co. Mayo (72.45MW)
- Kellystown Wind Farm, Co. Louth (40MW)
- Tullaghmore Wind Farm, Co. Galway (36MW)
- Gorteen Wind Farm, Co. Sligo (3.5MW)
- Ballykett Wind Farm, Co. Clare (20MW)
- Firlough Wind Farm and Hydrogen Plant, Co. Mayo (78MW)

WORK EXPERIENCE

March 2018

February 2022

Crowe's Grocer and Baker Nenagh

Responsibilities:

Sales and Deli Assistant

2018 - 2019

NUIG

Volunteering in University

Achieved a CÉIM Leader Certificate through completing a CÉIM Leadership course.

A CÉIM Leader is a peer mentor for first year students, easing the transition from second to third level education, assisting them with any needs while also explaining course work during weekly sessions.

Role: CÉIM Leader, 2018 – 2019

Curriculum Vitae

Aisling Layden *PhD, MSc, BSc*



Profession

Environmental Scientist

Position with firm

Environmental Scientist

Years of Experience

23.5

Educational Qualifications

- Level 6 Animal Care, Sligo College of Further Education, 2021
- PhD Global Lake Water Temperatures, University of Edinburgh, 2014
- Master of Science (MSc) Environmental Sustainability, University of Edinburgh, 2009
- BSc (Honours) Applied Biology and Quality Management, Waterford Institute of Technology, 2004

Publications

- *Determining lake surface water temperatures worldwide using a tuned one-dimensional lake model (FLake, v1)* Layden, Aisling & Merchant, C & MacCallum, Stuart. (2015). *Geosci. Model Dev.*, 9, 2167-2189, 2016
- *Global climatology of surface water temperatures of large lakes by remote sensing.* Layden, A., Merchant, C and MacCallum, S. (2015), *Int. J. Climatol.*, 35: 4464-4479. doi:10. 1002/joc.4299

KEY HIGHLIGHTS

With over 18 years in highly regulated industries and 5.5 years in environmental research and teaching, Aisling has gained a wide range of strong transferable technical and non-technical skills. Aisling's strengths are self-motivation, adaptability, organisation, excellent communication skills and analytical skills and a strong ability to grasp new technical concepts. Aisling gets enjoyment from her work, particularly with new opportunities and projects.

EXPERIENCE

July 2023 – Present

Jennings O'Donovan & Partners Limited

- **Cabragh Wind Farm, Co. Sligo (30MW)**
EIAR and Planning Application to the Local Authority. **Project Manager**

May 2023 – June 2023

Rockygrange Hydro Electric, Ballisodare, Sligo

Supporting wind farm development by managing and organising the technical information and planning requirements for the progression of 5 wind farm projects, at various stages of scoping and planning. Responsibilities ranged from project prioritisation and timing, consultancy costings, subs-contractor RFIs and technical data collation for EIAs. **Project Manager**

2021 – 2023

Part-time Dog Grooming Business

Design, set-up and operation of dog grooming business.

October 2018 – June 2020

Abbvie, Ballytivnan, Sligo

As the designated Project Engineer (PE), Aisling designed and implemented a complex network of single-use technologies for the transportation, processing, manufacturing and filling of a new liquid drug. She was PE for the associated equipment and utilities, such as purified water system and distribution pipework, reactor vessels and leak detection systems and their associated documentation; O&M manuals, operational procedures, Risk assessments, design specifications documents, drawings and P&IDs. Responsibilities spanned from tender & procurement stage through to the implementation and commission & qualification work, carried out in accordance with corporate, H&S and regulatory best practices and standards. **Project Engineer**

June 2015 – October 2018

Allergan (now Abbvie), Ballytivnan, Sligo

Validation (Commissioning and Qualification) engineer on the design and build of an automatic skid for the compounding, mixing, aseptic transfer and filling of a new biological product for intraocular injection. Responsible for the design, build and qualification of all temperature units in new biological facility from bench top incubator and large walk in multi-level warehouse fridge/ freezers. Build and qualification of automatic vision system for product reconciliation. Qualification of sterile fill lines. Preparation for regulatory and customer audits. **Validation Engineer**

March 2014 – June 2015

Horizon Engineering, Westport, Mayo

Aisling's main project in this role was project management of the upgrading several manufacturing lines within a healthcare company to meet HPRA (Health Product Regulations Authority) standards. This project had many stakeholders (HPRA auditors, in-house team and a team of external contractors), aggressive timeline and many technical challenges. Aisling's project management responsibilities spanned across the areas of procurement, costing and request for capital expenditure, budgets, project design, planning, managing a team of contractors, troubleshooting, problem solving, design reviews, reviewing and updating design changes as challenges were encountered and resolved, while keeping in-house team and HPRA representative informed of progress. The upgraded lines were successfully commissioned and in accordance with corporate and regulatory standards and successfully handed over. **Project Manager**

Other PM projects; Factory Acceptance Testing at vendors sites (Italy, German), Front End Study (Sligo), Statistical analysis project (Mayo). **Project Manager**

Aisling Layden CV (cont'd)

September 2008 – February 2014 **Education, Research & part-time Teaching, The University of Edinburgh**
Teaching Responsibilities; Tutorials, laboratory demonstrations, laboratory practical and essay marking. **Tutor**

July 2004 – August 2008 **Abbott Ireland Diagnostic Division (AIDD) Sligo**
Validation (from the design to operational stage) of facility, equipment, commodity, test methods and raw materials for diagnostic cancer product in a new large highly regulated production facility. Aisling's work required a high level of interaction with several in-house departments, corporate site and supply companies. Generation of site master validation plans. **Validation Engineer**

November 1999 – July 2004 **TEVA Pharmaceuticals Ltd, Waterford**
Generating FDA compliant validation documents for both tableting (granulation, blending, compression, encapsulation and coating) and inhalation processes. Validation of cleaning methods by determination of acceptable residual drug /detergent limits on shared manufacturing equipment. Generation of site validation master plans. Process mapping and process optimization. In-house auditing for FDA and H&S compliance. **Validation Technologist**

February 1998 – August 1999 **Travel and Casual work, Australia and New Zealand**

October 1994 – February 1998 **Abbott Ireland Diagnostic Division (AIDD) Sligo**
As 1 of 9 recruits in a new plant start-up, Aisling was actively involved in planning, manufacturing, QC and validation (process and cleaning) in order to achieve our product launch date for bulk saline and diluents for use on diagnostic platforms. On expansion of the plant, to facilitate the manufacture of diagnostic products, Aisling was heavily involved in product manufacturing and filling line validation, developing robust operational procedures, process mapping, process optimization and training new personnel.

In the last 18 months, Aisling was responsible for the final quality release of all products, co-ordination of the activities of laboratory testing personnel and scheduling of Validation and Calibration activities. **Quality Diagnostic Specialist**

October 1993 – March 1994 **Engineering Hydrology Department NUI, Galway**
Demonstration of a wide range of hydraulic experiments to engineering students. Procedural set-up of a new water testing and laboratory. **Laboratory Technician**

OTHER EXPERIENCE / ACHIEVEMENTS

PhD International Conference Presentations:

- International Agency of Great Lake Research (IAGLR) Conference, Minnesota, May 2011
- American Geophysical Union (AGU), San Francisco, December 2011
- Global Lake Temperature Collaboration (GLTC), Nebraska, May 2012
- Globolakes Conference, Stirling, Scotland, December 2012
- EarthTemp International Network, Edinburgh, Scotland, June 2012

Additional Activities undertaken during PhD:

- Tutorials: MSc Environmental Sustainability and BSc Environmental Science
- Laboratories: BSc Global Environmental Processes
- Marking: BSc Essays and Laboratory Experiments and MSc Presentations
- Academic Fair Days: Providing Information and Research to current and prospective MSc students

Curriculum Vitae

Angelika Thiel *B.Sc.*



Profession

Environmental Scientist

Position with firm

Junior Environmental Scientist / Ecologist

Years of Experience

3

Educational Qualifications

- Bachelor of Science Geography, Leibniz University Hannover, 2019
- Cambridge English Certificate in Advanced English Level C1, 2014

H&S Qualifications

- Training for working with hazardous material containing Asbestos, 2019

KEY HIGHLIGHTS

Angelika is an Environmental Scientist with over 3 years' experience in Environmental Consultancy and Project Management. She graduated with a Bachelor of Science in Geography at the Leibniz University Hannover in 2019. Angelika specialises in Physical Geography and Landscape Ecology and Minor: Geoinformatics. Her Bachelor's Thesis was in "Soil Cover Quantification of Cropland based on Small-Scale Aerial Photographs (UAV)". In 2014 she successfully completed an English course "Advanced English" in Dun Laoghaire College, Dublin. Angelika is also proficient in MS Office (Word, Excel, PowerPoint), ArcGIS and Corel Draw. She relocated from Germany to Ireland in October 2021.

Angelika's skills include:

- Interpersonal Skills and Communication
- Attention to detail
- Critical thinking
- Mentoring
- Teamwork
- Problem-Solving and Decision Making

WORK EXPERIENCE

May 2022 – Present

Jennings O'Donovan & Partners, Sligo

- **Sligo Active Travel - Walkways, Sligo County Council**
Multiple Appropriate Assessment Screening Reports including GIS work.
- **Tirawley Wind Farm, Co. Mayo**
Preparation of EIAR chapters, attend Public Information Day and GIS work.
- **Enniscrone Pontoon, Co. Sligo**
Develop Appropriate Assessment Screening Report.
- **Invasive Species Survey for IDA, Finisklin**
Investigate site for Third Schedule invasive Part 1 and 2 species; develop report and GIS mapping.
- **Other responsibilities include:**
 - GIS Mapping across various projects
 - Supporting ecologist and author of AA and NIS reports for felling, replanting and road works licence applications.
 - Preparation of in-house EIAR chapters and Appropriate Assessments (AA's).
 - Undertaking preliminary invasive species surveys.

November 2019 – September 2021

ukon Umweltkonzepte
"environmental concepts", Hannover

Responsibilities included:

- Contaminated site and building site investigations, environmental reports, expert support and documentation of construction.

Role: Environmental Consultant & Project Manager

January 2019 – February 2019

Westermann Gruppe, Braunschweig

Responsibilities included:

- Publisher, Specialising in educational material.

Role: Internship

August 2017 – September 2017
concepts", Hannover

ukon Umweltkonzepte, "environmental

Responsibilities included:

- Environmental Consultant

Role: Internship

Curriculum Vitae

Breana Coyle BA, MSc MRTPI HD Planning and Environmental Planning Law



Profession

Principal Planner

Position with firm

Town Planner

Years of Experience

15

Educational Qualifications

- MSc Environmental Planning (2.1 honours degree), Queens University Belfast, 2008
- Bachelor of Arts – History & Geography (2.1 honours degree), NUI Galway, 2005

Professional Qualifications

- Chartered Member of the Royal Town Planning Institute
- Member of the Irish Planning Institute

KEY HIGHLIGHTS

Breana is an enthusiastic and motivated planner with over 15 years' experience in the private sector and have a thorough knowledge of the planning system.

Having spent all of her experience in the private sector consultancy, Breana has gained wide exposure to all aspects of the planning system and mediate well between key stakeholders, community groups and local planning authorities to achieve an agreeable outcome.

During her time at The JTS Partnership, she progressed her career obtaining valuable experience and verbal/written skills, demonstrating good knowledge of the planning process, planning legislation, government advice and policy, circulars and guidance notes.

Her experience allows her to exercise considered judgment in the provision of advice/recommendations, and she understands the importance of economic regeneration and commercial awareness.

Breana has gained excellent communication skills during her planning career having worked within teams and mediate well between clients, local planning authorities and other community groups/organizations to achieve an acceptable outcome. Her skills in negotiation, both verbal and written, have delivered projects on time to a successful conclusion within the agreed fee budget.

EXPERIENCE

May 2018 – Present **Jennings O'Donovan & Partners Ltd.**

- **Richfield Solar PV Farm, Co. Wexford (21MWp)**
Planning and Environmental Report to construct a 21MWp solar PV array with associated inverters/transformers, two containerised substations, a transformer and grid compensation equipment adjacent to the existing Richfield Wind Farm substation building, CCTV cameras, lighting, access tracks, fencing and associated electrical cabling, ducting and an electrical and communications cable ducting to connect to the existing Richfield Wind Farm substation together with all ancillary development. **Senior Planner**
- **Charafenna Wind Farm, Co. Leitrim**
Planning Permission and Environmental Impact Assessment Report (EIAR) on this 7 turbine Wind Farm (MW TBC). **Senior Planner**
- **Barnesmore Windfarm Repowering, Co. Donegal (60MW)**
Various planning aspects including overseeing the Pre-Application and Strategic Infrastructure Planning Application Process to An Bord Pleanála. **Senior Planner**
- **Farranrory Wind Farm, Co. Tipperary (45MW)**
Responsible for the overall project management of the planning application process and Environment Impact Assessment Report. **Senior Planner**
- **Dreenacreenig West Wind Farm Drimoleague, County Cork (4.6 MW)**
Preparation of a planning application for Substitute Consent and planning permission for wind farm and grid connection to An Bord Pleanála. Co-ordination and overall project management of the EIAR process. **Senior Planner**
- **Tullynamoyle Wind Farm, Co. Leitrim, and Extensions (34.5MW)**
Various planning aspects including overseeing the planning application process. **Senior Planner**
- **Belturbet to Corraquill Lock 1**
Responsible for the co-ordination and preparation of the Part VIII Planning Application for a proposed 6km recreational trail from Belturbet town centre to Corraquill along the Woodford River. The trail comprises of approximately 3km of Greenway and 3km of Blueway along existing and proposed roadways and trails, with a pedestrian bridge designed to cross the Rag River incorporating the existing concrete abutments. **Senior Planner**

Breana Coyle CV (cont'd)

2009 – May 2018

**The JTS Partnership, Canterbury, Kent.
Principal Planner**

Duties and responsibilities included:

- Assisting managing partner to discharge client instructions and working under their direction.
- Dealing with residential, commercial and mixed-use developments at all stages of the planning process throughout the UK.
- Responsible for the preparation and submission of planning applications and appeals, site appraisals, local plan representations, enforcement and master planning.
- Working closely with local plan teams on emerging development plan policy and up-to-date supplementary planning guidance. Engaged in local planning authorities' preparation of local plans and give advice on planning policy matters to clients, carrying out research into a variety of topics as part of the work on policy documents, writing briefs, employ and manage consultants for specialist work and projects.
- Monitoring and participate in consultations on local plans, prepare local plan representations including attendance at local plan examinations, reviewing and monitor the development of planning policy including the council's evidence base, annual monitoring reports, parish plans and supplementary planning documents.
- Generate new client instructions and work and manage client accounts.
- Assess and give advice by letter, telephone, site or office meetings to clients (developers or individuals) on medium/large sized and potentially controversial development proposals which may become the subject of formal planning applications including the interpretation of planning policies.
- Providing advice to clients and identify and resolve most issues that need to be addressed to discharge an instruction.
- Addressing Planning Committee meetings.
- Preparing evidence for, and representing clients at Planning Hearings and Inquiries.

Curriculum Vitae

Darren Timlin *B.Sc. (Hons)*



Profession

Environmental Scientist

Position with firm

Environmental Scientist

Years of Experience

1

Educational

Qualifications

- Bachelor of Environmental Science (Hons), IT Sligo, 2022

KEY HIGHLIGHTS

Darren is a highly motivated and enthusiastic individual with a BSc (Hons) Environmental Science Degree from IT, Sligo. He has a keen interest in the areas of ecology, energy management, environmental management systems and environmental impact assessments. Darren is adaptable and quick to grasp new tasks working well on his own initiative or as part of a team. His key skills include:

- Information Technology – Excellent working knowledge of computer programs Microsoft, Word, Excel, PowerPoint and GIS. Proficient in statistical and financial analyses.
- Ability to communicate effectively with colleagues and customers alike. Proactive within a team and individually. Level-headed and organised in stressful situations.
- Analytical – Systematic in problem solving in academia and employment. Willing and open-minded in new ways of approaching problems.
- Organisation – Punctual and reliable for meetings and start times. Experienced in organising projects to ensure completion within a given time frame. Report writing, Concise informative reports achieved to high standard for a variety of audiences. The ability to process large data sets and information, establishing a clear understanding and conclusion of a given project, completing reports in various formats as required.
- Field skills – Use of field equipment for monitoring environmental quality (water, air and soil). Proficient in biological monitoring of water and soil conditions. Good experience in recording, compilation and analysis of field data and incorporation into written and oral reports. Proficient in the use of GPS, maps and other pieces of equipment commonly used in field studies.
- Arc GIS – Advance knowledge of the use of Arc GIS software for mapping, design, and information gathering.

EXPERIENCE

April 2022 – Present

Jennings O'Donovan & Partners Limited

Since joining JOD, Darren has worked as a Junior Environmental Scientist on the following projects:

- Killala Hydrogen Plant and Energy Centre, Co. Mayo (200MW)
- Ballykett Wind Farm, Co. Clare (20MW)
- Tirawley Wind Farm, Co. Mayo (73.80MW)
- Kellystown Wind Farm, Co. Louth (40MW)
- Gortnahurra Wind Farm, Co. Mayo (97.6MW)
- Keenagh, Owenboy and Trista Wind Farm, Co. Mayo (134.2MW)
- Ballymackeehola Wind Farm, Co. Mayo (65.6MW)
- Other Responsibilities
 - Report writing such as in house chapters of Environmental Impact Assessment Reports (EIAR) Construction Environmental Management Plan (CEMP).
 - Liaising with stakeholders and relevant national organisations for renewable energy scoping enquires.
 - The preliminary design of Wind Farm layouts using Arc GIS.
 - Production of Figures for of Environmental Impact Assessment Reports (EIAR) using Arc GIS

WORK EXPERIENCE

2020 – 2022

Mr. Price Branded Bargains, Cleveragh Retail Park, Sligo

Responsibilities included:

- Customer Service – Providing a professional, friendly and courteous service to customer.
- Assume managerial responsibility in absence of store management.
- Handling of cash and card transactions in compliance with company policies.
- Ensuring shelves are fully stocked and presentable.
- Key Achievement: *Attained responsibility for own section of shop which is one of the highest performing in external audits.*

Role: Retail Assistant/Cashier

Darren Timlin CV *(cont'd)*

2013 – 2020 **Joseph Murphy's Ltd.**

Responsibilities included:

- Palletizing and checking orders for delivery.
- Re-allocation of products and barcoding of shelving.
- Creating invoices.
- Handling and distribution of goods in and outward.

Role: Warehouse Operative

RECEIVED: 04/12/2024

Louth CC, Planning Department - Viewing Purposes Only!

Curriculum Vitae

David Kiely B.E., M.Sc., Eur.Ing., C.Eng., FIEI, MICE, F.RConsEI



Profession

Civil Engineer

Position with firm

Director

Years of Experience

38

Educational Qualifications

- Bachelor of Engineering, University College Dublin, 1982
- Master of Science in Environmental Protection, Regional Technical College, Sligo, 1996
- Project Supervisor Design Process, 2014

Professional Qualifications

- FEANI – European Engineer, European Federation of National Engineering Associations
- Fellow of Engineers Ireland
- Fellow of the Association of Consulting Engineers of Ireland
- Member of the Institution of Civil Engineers, U.K.

Technical Publications:

- Killybegs Water Supply Scheme Lough Adeery Dams – McAleenan, F.M., Kiely, D and Cooper, G.A., 1993
- Treatment of Wastewater and Water Sludges in Ireland – Kiely, D 1996
- Primary Treatment Options for Fish Processing Effluent in Ireland – Dick, R.E., Ferguson, J.A.E., Duddy, A-M. and Kiely, D., 2000

KEY HIGHLIGHTS

A Director and Partner at Jennings O'Donovan & Partners Limited, David is currently responsible for the following:

- Project Manager for Planning Applications, Environmental Impact Statement, Response to Appeal to An Bord Pleanála.
- Project Director for Pre-Construction activities such as Planning Compliance, Access Route improvements, Procurement, Civil Works Design, Environmental, Health and Safety, Contract Negotiations (including Turbine Supply).
- Project Director for construction administration of Turbine Supply Contract, Civil Works Contract and Grid Connection Cabling Contract.
- Responsible for Development, Monitoring and Control of Project Budgets.
- Overseeing the design of Wind Farm Infrastructure and Turbine Bases.
- Geotechnical Evaluation of Wind Farm Sites.
- Overseeing the preparation of various forms of reports and studies.
- Technical Review of various forms of Contract Documentation.
- Tender Evaluation and Contract Administration of major Contracts.
- Project Management.
- Due Diligence Specialist Support to Potential Investors.

EXPERIENCE

1990 – Present Jennings O'Donovan & Partners Limited

• Timahoe North Solar Project, Co. Kildare

JOD are currently providing Owner's Engineer services to Bord na Móna for the construction of a photovoltaic solar farm with the capacity of 108 MWp. The project entails the construction and operation of 2 areas (Northern and Southern) of solar photovoltaic arrays mounted on metal frames over an area of approximately 200ha and having a maximum overall height of 3m above ground level. The solar farm will consist of approximately 166,320 sqm of PV modules, 12 single story inverter/ transformer stations, internal access tracks and underground cable connections. **Project Director**

• Mainscourt Solar Project 38kV Substation & 38kV Grid Connection, Co. Dublin

• Martinstown Solar Project 20kV Substation & 20kV Grid Connection, Co. Meath

• Painestown Hill Solar Project 20kV Substation & 20kV Grid Connection, Co. Meath

• Dysart Solar Project 20kV Substation & 20kV Grid Connection, Co. Kildare

• Pollardstown Solar Project 20kV Substation & 20kV Grid Connection, Co. Kildare

• Knockadosan Solar Project 20kV Substation & 20kV Grid Connection, Co. Wicklow

• Beaulieu Solar Project 10kV Substation & 10kV Grid Connection, Co. Louth

• Creevy Solar Project 10kV Substation & 10kV Grid Connection, Co. Roscommon

JOD are currently providing project management and PSDP consultancy services to deliver these Solar Park Substation and Grid Connection projects through the pre-construction and construction phases. The role involves preparation of Tender/ Contract Documents, Interfacing with Clients Legal and Financial advisors, preparation of Preliminary Health & Safety Plan, and negotiate and act on behalf of Client during Tender Process for Balance of Plant Contracts with Electrical Technical Advisor. **Project Director**

• Barnesmore Wind Farm Repower Project, Co. Donegal (65MW)

SID Planning Permission, Environmental Impact Assessment Report (EIAR) and Public Consultation on this 13 turbine Wind Farm with a total output of 65MW. **Project Director**

• Killala Community Wind Farm, Co. Mayo (17MW)

Preparation of planning application including EIAR and associated documents for a 5 turbine wind farm in County Mayo. Preparation of a Section 5 application for a grid connection between the wind farm and a 110kV substation. Planning Permission for a 6th Turbine. Owner's Engineer for construction of the 5-turbine wind farm incl. 38kV substation. Complete August 2019. Owner's Engineer for construction of T6 complete November 2020. **Project Director**

• Cronalaght Wind Farm, Co. Donegal (18MW)

Pre-construction, preparation of contract documents and tender assessment, construction administration and PSDP for this wind farm consisting of 5 x 3.45MW wind turbines. Construction complete. **Project Director**

David Kiely CV (cont'd)

- **Lumcloon (100MW) BESS & Derrycarney 110kV Substation, Co. Offaly**
This project consisted of the construction of a 100MW BESS project, the project is an open area BESS compound containing battery units and medium voltage power station (MVPS) enclosures, a 110/33kV Transformer and associated bay and a 33kV Substation. The construction of the new Derrycarney 110kV AIS loop in Substation and compound. The projects construction phase is ongoing. **Project Director**
Jennings O'Donovan carry out the role of Owners Engineer; including Contract Negotiation, administering the D&B Contract, General Project Management, reviewing Civil & Electrical Designs, acting as SPOC with EirGrid, monitoring quality and programme, site attendance and placement of a Resident Engineer, Monitoring interfaces, assessing payments and issuing Payment Certificates, Declaration of Identify, assisting in queries related to Financial Close.
- **Shannonbridge (100MW) BESS, Co. Offaly**
This project consisted of the construction of 100MW BESS project, the project is an open area BESS compound containing battery units and medium voltage power station (MVPS) enclosures, a 220/33kV Transformer and associated bay and a 33kV Substation. The projects construction phase is ongoing. **Project Director**
Jennings O'Donovan carry out the role of Owners Engineer; including Contract Negotiation, administering the D&B Contract, General Project Management, reviewing Civil & Electrical Designs, acting as SPOC with EirGrid, monitoring quality and programme, site attendance and placement of a Resident Engineer, Monitoring interfaces, assessing payments and issuing Payment Certificates, Declaration of Identify, assisting in queries related to Financial Close.
- **Ballycumber Wind Farm, Co. Wicklow (18MW) / 38kV Grid Connection**
Project consisting of 6 x 3.2MW wind turbines, onsite 38kV substation, preparation of Land Transfer maps (Haul Route) and 23.5km of 38kV underground grid connection, liaison with ESBN and Wicklow County Council Area Engineers regarding Grid Route selection 20km of transport route accommodation works, and all civil and electrical associated works. Planning compliance / Section 5 submission through to client takeover. **Project Director**
- **Rathsherry Wind Farm, Co. Antrim (21.15MW)**
Planning compliance, civil works design and pre-construction activities for 9 x 2.35MW turbines. Owner's Engineer for construction stage civil works. **Project Director**
- **Meenadreen Extension Wind Farm, Co. Donegal (95MW)**
Planning stage, planning compliance, civil works design and pre-construction activities for 38 No. 2.5MW turbines. Owner's Engineer for construction of civil works. PSDP Assigned Certifier. Project encompasses four consented wind farms viz Meenadreen Extension, Straness, Croaghnameal and Lough Cuill, and includes 7.4km of 110kV contestable grid connection, Mulreavy AIS and Clogher GIS 110kV sub-stations. Also includes Operations Building. Construction complete January 2017. **Project Director**
- **Sliabh Bawn Wind Farm, Co. Roscommon (58MW)**
Project Director for Planning Permission, Environmental Impact Assessment, Public Consultation, Response to Appeal to An Bord Pleanála. Permission granted 2012. The project comprised 20 No. 3MW turbines curtailed to 58MW together with a new 33kV/110kV substation. Owner's Engineer for construction of civil works. Construction complete 2016. **Project Director**
- **Long Mountain and Glenbuck Wind Farms, Co. Antrim (34.5MW)**
Project Director / Owner's Engineer for Planning Compliance and Civil Works Balance of Plant Contract. Construction complete. **Project Director / Owner's Engineer**
- **Altaveedan Wind Farm, Co. Antrim**
Project Director / Contractor's Designer for Civil Works. Civil Works complete 2016. **Project Director / Contractor's Designer**
- **Altamuskin, Gortfinbar and Eshmore Wind Farms, Co. Tyrone (36MW)**
Project Director / Owner's Engineer for Planning Compliance and Civil Works Balance of Plant Contract. Construction complete December 2016. **Project Director / Owner's Engineer**
- **Molly Mountain Wind Farm, Co. Fermanagh (18MW)**
Project Manager for Turbine Supply and Pre-Construction Works. Project Director for Construction Phase. Negotiate Turbine Supply contract and Turbine Service Agreement for 5 x 3MW turbines. Planning Compliance. Technical Assistance for Financial Close. Project management during Construction Phase. Complete 2015. **Project Manager / Director**
- **Seegronan Wind Farm, Co. Tyrone (18.4MW)**
This development consists of the construction of 6 No. wind turbines of up to 110m high each including associated transformers, hardstandings, substation, associated access roads and all ancillary works associated with the wind farm development. Project complete December 2016. **Project Director**
- **Crockandun Wind Farm, Co. Derry (18MW)**
This Project consists of the construction of 6 No. wind turbines of up to 125m high each including associated transformers, hardstandings, substation, borrow pits, associated access roads and all ancillary works associated with the wind farm development. Construction complete February 2017. **Project Director**

David Kiely CV (cont'd)

- **Booltiagh 110kV Substation Extension, Co. Clare**
Owner's Engineer for the Booltiagh 110kV substation extension located in Booltiagh townland, County Clare. The existing 110kV substation is connected to the 110kV transmission network via connections to both Ennis 110kV substation and Moneypoint 110kV substation. The Booltiagh Substation was extended to facilitate the connection of Gate 3 wind farms in the area. Project complete. **Project Director**
- **Letteragh Wind Farm, Co. Clare**
Design and project management services for the planning, design, construction, and commissioning of Letteragh Wind Farm consisting of 6 x 2.3MW wind turbines. **Project Director**
- **Tullynamoyle Wind Farm, Co. Leitrim, and Extensions (53MW)**
Project Director for Planning for original 6 wind turbines project (Phase 1 and 2), 6 turbine extension (Phase 3), 3 turbine extension (Phase 4) and 6 turbine extension (Phase 5) to give overall capacity of 53MW. Planning Stage, Procurement (including Turbine Supply and Turbine Supply Agreement), Financial Close and Construction (including Engineer for Turbine Supply Contract) for Phase 1 (9.2MW) complete 2012. Phase 2 (13.8MW), Phase 3 (28MW) and Phase 4 (35MW) complete November 2017. Phase 5 (18MW) granted planning permission. Planning application for Phase 5 extension of 16MW. **Project Director**
- **Holyford Wind Farm, Co. Tipperary (9MW)**
Project Director for Pre-Construction and Construction Stages for Civil Works BOP Contract and 5.8km, 20kV overhead line grid connection. Complete 2013. **Project Director**
- **Screggagh Wind Farm, Co. Tyrone (20MW)**
Project Director for Planning and Construction Stages for 8 x 2.5MW wind turbines. Complete 2011. Act as Engineer for Turbine Supply Contract. **Project Director**
- **Ballycurreen Wind Farm, Co. Waterford (4.6MW)**
Project Director for Planning, Pre-Construction and Construction Stages of 2 x 2.3MW wind farm. Act as Owner's Engineer for Turbine Supply Contract. Complete 2014. **Project Director**
- **Church Hill & Crigshane Wind Farms, Co. Tyrone (50.6MW)**
Project Director for Planning Compliance, Civil Works Design, Road Improvement Works, Tendering and Construction Management for 2 wind farms with combined output of 50.6MW (22 x 2.3MW). Complete 2012. **Project Director**
- **Caherdowney Wind Farm & Garrow 110kV Sub-Station Extension (9.2MW)**
Project Director for Pre-Construction and Construction Stages (planning compliance, civil and environmental) for 4 x 2.3MW turbines. Complete 2012. **Project Director**
- **Cloghboola Wind Farm, Co. Kerry (46MW)**
Project Director Planning Applications for revised layout and sub-station for wind farms in SPA. Owner's Engineer for Phase 1 Construction work. Complete 2007. Civil / Structural design for new 110kV sub-station energised in 2014. **Project Director**
- **Yellow River Wind Farm, Co. Offaly (96MW)**
Project Director for Planning Application through S.I.D. route. **Project Director**
- **Lisheen II Wind Farm, Co. Tipperary (24MW)**
Project Director for geotechnical investigations, civil works and turbine foundation design (including piled bases) for civil sub-contractor as part of overall EPC Contract. 12 x 2MW turbines. Complete 2012. **Project Director**
- **Corkermore Wind Farm, Co. Donegal (12MW Phase 1)**
Project Director for Pre-construction and Construction Stage (planning compliance, pre-construction and construction) for civil works BOP Contract. 6 x 2MW turbines. Complete 2011. **Project Director**

WORK EXPERIENCE

July 1988 – March 1990	Enco Civil Engineering Ltd., Slough, U.K.
May 1987 – June 1988	Doherty Civil Engineering Ltd., Essex, U.K.
October 1985 – April 1987	Hawkins, Hawkins & Osborn, Consulting Engineers, Umtata Office, Transkei, South Africa
October 1982 – September 1985	Department of Water Affairs, Namibia, South West Africa

Curriculum Vitae

John Doogan Dip.C.Eng.



Profession

Civil Engineering Technician

Position with firm

Senior Technician

Years of Experience

35

Educational Qualifications

- National Cert in Computer Programming
Bolton Street College of Technology, Dublin, 2001
- City and Guilds Computer Aided Draughting and Design
Croydon College, London, 1992
- National Diploma in Civil Engineering (HND)
Bolton Street College of Technology, Dublin, 1987

KEY HIGHLIGHTS

John has over 35 years experience of road design for wind farms, major road projects and for commercial projects in Ireland, Britain and the Middle East. John has also extensive experience in the compilation of compulsory Purchase Order Documents, landowner negotiations, wayleaves, Traffic Impact Assessments and Junction Design. His Key Technical and Process Capabilities include:

- Geometric Design of Roads and Junctions to the NRA DMRB using MX and Autodesk Civil 3d road design software.
- Contract Drawings
- Compilation of Compulsory Purchase Order Documents
- Landowner negotiations
- Traffic Impact Assessment reports and Junction Analysis using Arcady, Picady and Trics traffic modelling Software
- Structural Inspections and Testing of concrete structures
- Traffic Management Plans
- Haul Route Design & Upgrade for Wind Farms
- Internal Site Road Design for Wind Farms
- Drainage Design

EXPERIENCE

2003 – Present Jennings O'Donovan & Partners Limited

Summary of Experience in Roads and Traffic Engineering:

Geometric Design of Roads and Junctions to the NRA DMRB using MX and Autodesk Civil 3d road design software. Production of Contract Drawings, for Roads Schemes using Autocad drawing software. Compilation of Compulsory Purchase Order Documents including land searches, landowner negotiations and production of Deposit / Server maps and Schedules. Traffic Impact Assessment reports and Junction Analysis using Arcady, Picady and Trics traffic modelling Software. Structural Inspections and Testing of concrete structures including visual inspections and reinforcement cover surveys.

Proposed Beach Access to Tullan Strand, Bundoran

Preparation of a Preliminary Design Report for a proposed pedestrian and emergency vehicle access to Tullan Strand, Bundoran, Co. Donegal. The project involved the preparation of a Preliminary Report which recommended a preferred option for safe pedestrian and emergency vehicle access to Tullan Strand. The report reviewed all feasible route options and documented the environmental constraints, land ownership, traffic impact assessment, maintenance, compliance with design standards and typical costs to implement each option. **Project Manager**

IDA Business Park, Sligo - Traffic Management & Upgrade Works

Carried out a survey and review of the current traffic management arrangements and pedestrian facilities within the IDA Sligo Business Park. The Park is approx. 42 hectares in size. The objective of the works was to provide a new surface course and replacement of the existing cushion ramps with full length 'flat top' ramps. Pedestrian Crossings were reinstated at existing locations, and three additional Pedestrian Crossing provided. Chamber covers sunken below the road surface were raised, milled line markings replaced, tactile paving provided at the junction between Access Road No. 2 and 3, and repairs to existing tactile pavement at the junction between Access Road No. 1 and 2. **Project Manager**

IDA Business Park, Sligo - Infrastructure Review & Upgrade Works

Carried out a review of the existing Infrastructure within the IDA Sligo Business Park. The review included the condition of roads, lighting, water mains, foul and surface water drainage, footpaths and signage within the Business Park. **Project Manager**

Killybegs Fishery Harbour Centre, Co. Donegal

Carried out a review of all existing signage within the Killybegs fishery harbour centre to assess the suitability of existing signage and provided recommendations for installation of new and replacement signs in accordance with the Traffic Signs manual. **Senior Technician**

Wind Farm Access Road, Various locations

Design of wind farm access roads and crane hardstands for various wind farm projects in Ireland and overseas. Road design carried out to accommodate abnormal load vehicles used for the transportation of wind turbine components. **Senior Technician**

John Doogan CV (cont'd)

- **Wind Farm Haul Route Assessment, Various locations**

Assessment of public road network for abnormal load vehicles transporting wind turbine components, including site surveys, autotrack analysis, design of road widening, relocation of street furniture and service diversions; **Senior Technician**

Wind Farm projects worked on include:

- | | | |
|----------------|-----------------|-----------------|
| - Altgolan | - Dreenacreenig | - Lisdowney |
| - Barnesmore | - Drumlins | - Long Mountain |
| - Bracklyn | - Dunbeg | - Maas |
| - Carrickallen | - Dunmore | - Meenadreen |
| - Carrowleagh | - Eshmore | - Pigeon Top |
| - Cloghan | - Faughary | - Rathsherry |
| - Clunahill | - Foiladaun | - Seegronan |
| - Coolberin | - Glenbuck | - Sliabh Bawn |
| - Corkermore | - Gortfinbar | - Slieveglass |
| - Cornavarrow | - Gortyrhilly | - Taghart |
| - Croaghnameal | - Hollyford | - Thornog |
| - Cronalaght | - Inchamore | - Tullaghboy |
| - Crossmore | - Killala | - Tullynamoyle |
| - Derrykillew | - Kiltumper | - Yellow River |
| - Dooish | - Letteragh | |

- **Killybegs Fishery Harbour Centre, Co. Donegal**

Carried out a review of existing traffic management and safety measures within the Killybegs fishery harbour centre and compilation of a traffic management plan for the harbour area detailing traffic calming measures, junction upgrades and pedestrian facilities. **Senior Technician**

- **Cootehill New Street, Co. Cavan**

Design of proposed new street in Cootehill town centre including route selection, public consultation, traffic management and geometric design. **Senior Technician**

- **N6 Ballinasloe to Athlone Dual Carriageway**

Production of Compulsory Purchase Order Drawings and Landowner Schedules. Assisting with the Preliminary Geometric Design using MX Software and responsible for the compilation of Contract Drawings using Autocad for 20.0 km of Dual Carriageway, 1.0 km of Link road, one Interchange, eight Overbridges, four Underbridges including a railway and river crossing, three at grade Roundabout Junctions and accommodation works for the N6 Ballinasloe to Athlone Dual Carriageway in County Roscommon; **Senior Technician**

- **N13 Trentaboy to Bullock Park, Co. Donegal**

Production of Contract Documents for a 3.5Km Re-surfacing Contract on the N13 in County Donegal; **Senior Technician**

- **Bundoran / Killybegs Sewerage Scheme – Advance Works, Co. Donegal**

Production of Preliminary Design and Compulsory Purchase Order documents for access roads to Bundoran and Killybegs waste water treatment plants; **Senior Technician**

- **Traffic Impact Analysis, Junction Design and Internal Road Layouts**

Production of Traffic Impact Analysis reports, Junction Design and Internal Road layouts for Commercial and Residential Developments including Traffic Calming, Road markings and Signage; **Senior Technician**

- **Quarry Entrance from N59 at Ballisodare, Co. Sligo**

Production of Construction Drawings and Setting Out Details for a new Ghost island Junction on the N59 National Route; **Senior Technician**

- **Student Housing Roundabout on the R245, Letterkenny, Co. Donegal**

Production of Construction Drawings and Setting Out Details for a new 40m inscribed circle diameter roundabout junction on a regional route; **Senior Technician**

- **Creamery Roundabout on the R245, Letterkenny, Co. Donegal**

Production of Preliminary Design Drawings of new 50m inscribed circle diameter roundabout junction on a regional route; **Senior Technician**

WORK EXPERIENCE

September 1997 – September 2003
September 1989 – September 1997
February 1989 – September 1989

M.C. O' Sullivan & Co. Ltd., Consulting Engineers (RPS Group plc)
Mott Mac Donald Group Ltd.
Warren Pickrell Associates

Curriculum Vitae

Kathlyn Feeney B.Sc. (Hons)



Profession

Environmental Scientist

Position with firm

Graduate Environmental Scientist

Years of Experience

1

Educational

Qualifications

- B.Sc. (Hons) of Environmental Science, ATU, Sligo, 2023
- Sligo College of Further Education Animal Care, QQI Level 5 Qualification

H&S Qualifications

- Certificate in Fire Safety awareness and Marshall Training.

KEY HIGHLIGHTS

Kathlyn is a Graduate Environmental Scientist in JOD with strong organisational skills, and the ability to work well with people or independently on tasks or projects as required. She has excellent time management skills with the ability to complete work within tight deadlines. Other key skills include:

- **Communication:** Ability to communicate effectively with colleagues and customers alike, to operate proficiently within a team and independently.
- **Organization:** Ability to work to demanding deadlines with an excellent record for meeting assignment deadlines.
- **Analytical:** Ability to collect, collate and analyse data and present in a variety of formats and make conclusions based on academic knowledge. Problem solving skills in both working and academic settings.
- **Information Technology:** Excellent working knowledge of Microsoft Word, Excel, PowerPoint, ArcGIS and WindPro 4.0.
- **Report Writing:** Ability to formulate scientific reports and convey information through report writing.

EXPERIENCE

January 2024 – Present

Jennings O'Donovan & Partners Limited

- **Report Preparation:** Assisting in the preparation of Environmental Impact Assessment Reports for various renewable energy projects. Completing reports such as feasibility studies, AA and EIA screenings, and NIS for a variety of projects, such as housing developments, renewable energy projects etc.
- **Completing Environmental Assessments:** Evaluating the environmental impact of projects on a variety of environmental topics, using software such as ArcGIS and WindPro 4.0 in analysis.
- **Client consultation:** advising clients on projects, conveying findings from environmental assessments and providing recommendations based on this.

Environmental Scientist

2023 – 2024

Lough Gill Distillery, Sligo

- Performing daily quality checks on products produced using a variety of lab equipment.
- Formatting Standard Operating Procedures (SOPs) for the lab.
- Daily water analysis.
- Calibration of lab equipment.
- Ordering and restocking lab consumables.
- Recording and analysing the facilities, water and energy usage.

Laboratory Technician, Environmental Scientist

OTHER EXPERIENCE

2021 – 2022

Camille Thai, Sligo

2016 – 2021

The Glasshouse Hotel, Sligo

ACHIEVEMENTS / ACCOMPLISHMENTS

- Kathlyn's Undergraduate Thesis was chosen for a Poster Presenter at the Science Undergraduate Research Experience (SURE) 2023.
- Completed full training on Agilent 8890 Gas Chromatograph (GC) Operation with OpenLab CDS

Curriculum Vitae

Padraig O'Dowd *M.Sc, GradDip, B.A., GradIEMA.*



Profession

Environmental Scientist

Position with firm

Graduate Environmental Scientist

Years of Experience

2

Educational Qualifications

- Green Tech Skillnet's Skills Connect Programme - Work in Wind Energy Ireland Naas, Co. Kildare, May 2022 – Jun 2022.
- NFQ Level 9, Graduate Diploma in Design Thinking for Sustainability, University College Dublin (UCD), 2022
- NFQ Level 9, Masters of Science in Design Innovation, Maynooth University, 2020
- NFQ Level 8, Bachelor of Arts, Honours Creative Design, Atlantic Technological University (ATU) Sligo, 2019

Certifications/Licences

- Project Management & Impactful Leadership Training for Wind Energy Blue Sky - The Project Management Experts.
- Marine Spatial Planning, Irish Planning Institute

KEY HIGHLIGHTS

Graduate Environmental Scientist at Jennings O'Donovan, adept in EIAR reports and skilled in ArcGIS. As an experienced design and research professional, Padraig contributes to sustainability across various domains, fostering a zero-carbon future. His diverse skillset encompasses strong analytical, writing, and networking abilities, ensuring impactful collaboration on a range of projects.

Padraig's key skills include:

- Early-stage Investigative Research
- R&D
- Design Development
- Innovation & Disruption
- Stakeholder Engagement
- Grant Writing
- Time Management
- Teamwork
- Sustainable Approaches
- Systemic Thinking
- Data Management & Analysis

EXPERIENCE

September 2023 – Present

Jennings O'Donovan & Partners Limited

- **Altnagapple Wind Farm, Co. Donegal (18MW)**
Planning Permission and Environmental Impact Assessment Report (EIAR) on this 4 turbine Wind Farm with a total output of 18MW. **Graduate Environmental Scientist**
- **Clonarrow Wind Farm, Co. Offaly (24MW)**
Planning Permission and Environmental Impact Assessment Report (EIAR) on this 4 turbine Wind Farm with a total output of 24MW. **Graduate Environmental Scientist**
- **Kellystown Wind Farm, Co. Louth (40MW)**
Planning Permission and Environmental Impact Assessment Report (EIAR) on this 5 turbine Wind Farm with a total output of 40MW. **Graduate Environmental Scientist**
- **Gortloughra Wind Farm, Co. Cork (54MW)**
Planning Permission and Environmental Impact Assessment Report (EIAR) on this 9 turbine Wind Farm with a total output of 54MW. **Graduate Environmental Scientist**
- **Cabragh Wind Farm, Co. Sligo (17 – 19MW)**
Planning Permission and Environmental Impact Assessment Report (EIAR) on this 4 turbine Wind Farm with a total output of 17 – 19MW. **Graduate Environmental Scientist**
- Other responsibilities:
 - Conducting cumulative wind farm assessments.
 - Contributing to wind farm feasibility studies, analysing data and helping make informed decisions about the project's viability and development.
 - Reviewing wind farm photomontage portfolios.
 - Report writing and ecological quadric results.
 - Aiding in the development of the company's sustainability strategy report. ensuring that the company is abiding by ISO - 50001 Energy Management.
 - AA screening on proposed developments for ecological protection and assessment.

OTHER EXPERIENCE

October 2022 – September 2023

Research and Green Tech Skillnet

- Successfully prepared seven grant applications for EU (European Union) and national-funded projects, highlighting strong grant writing skills abiding by Erasmus+, SEAI (Sustainable Energy Authority of Ireland) RD&D 2023, and Horizon Europe guidelines creating a pipeline.

Padraig O'Dowd CV (cont'd)

- Conducted evidence-based research aligned with strategic goals, supporting overall strategies with findings and recommendations.
- Demonstrated strong writing and presentation skills, effectively communicating with stakeholders throughout research projects.
- Maintained accuracy and completeness of information in the updated Master Copy Applications 2023 Excel sheet for external review.
- Gained valuable experience by working in two different departments, expanding my skill set and adapting to dynamic work environments working in teams of three and four.
- Built connections whilst working at conferences such as "The Offshore Wind Conference, "Irish Wind Industry Awards Conference," and "The Annual Conference."
- Mentored and led four students in a design research project focusing on the renewable energy sector for four weeks through a collaboration between Wind Energy Ireland and the UCD Innovation Academy that he created.
- Fostered inclusive collaborations with professionals, emphasising communication and mutual support for successful project outcomes.
- Assisted with multiple tender proposals for upcoming GTS courses, demonstrating strong project management and coordination skills.
- Conducted research and developed the ERSG: Education, Research, Skills, Group, bridging the gap between industry and academia in the wind sector.

Intern – Research Assistant

January 2022 – April 2022

University College Dublin, Innovation Academy

- Conducted research on "Systems Thinking & Sustainable Development for the Workplace of the Future" using design thinking methods with a team of four.
- Explored potential benefits of experiential learning for employees and employers.
- Improved internal structures at UCD Innovation Academy through the application of design thinking.
- Expressing potential opportunities for "Augmented Reality Lab," "Sustainability Living Lab" and "Makers Space Lab."
- Enhanced course structure to align with industry needs focusing on soft skills.

Intern – Research Assistant

March 2020 – August 2020

Ballast Design, Signs & Branding

- Developed creative design solutions for branding, advertising, and marketing collateral.
- Collaborated with clients and team members to understand project objectives and create visual concepts using Adobe Creative Suite
- Designed logos, brochures, flyers, posters, website layouts, and vehicle wrap designs.
- Ensured design consistency and brand identity across platforms.
- Managed multiple design projects, meeting project timelines and deadlines.

Graphic Designer

Curriculum Vitae

Ryan Mitchell *B.Sc. (Hons)*



Profession

Environmental Scientist

Position with firm

Environmental Scientist

Years of Experience

7

Educational

Qualifications

- BSc Hons Animal Conservation and Biodiversity: 2:1, Greenwich University: Hadlow College Campus, 2015

KEY HIGHLIGHTS

Ryan Mitchell is an Environmental Scientist / Ecologist and Project Manager at Jennings O'Donovan & Partners Limited. He has a Bachelor of Science in Animal Conservation and Biodiversity. Ryan has experience of project managing large renewable projects primarily wind farm planning applications both large scale SID (Strategic Infrastructure Development) projects over 50MW and smaller projects submitted to the local authority. He oversees all elements of the project managing finances, sub-contractors, overseeing project design and reviewing environmental constraints, liaison with local authority and An Bord Pleanála, stakeholders and clients, writing and preparing EIAR chapters. He has gained in-house experience on surveying and identifying Vertigo snails, Phase 1 Habitat surveys, report writing, preparing chapters for Environmental Impact Assessments, Appropriate Assessments and Construction Environmental Management Plans.

Ryan also has experience in writing successful funding grants with organisations such as National Wild Parks Service (NWPS) for biological recording survey work. More recently, he has obtained licenses for freshwater pearl mussel monitoring (*Margaritifera margaritifera*) with NWPS on a certified training course Phase 1 & Phase 2. Ryan is also an experienced Bat surveyor and carries out Preliminary Bat Roost Survey Assessment Reports and Bat Activity surveys on structures which are to be impacted by a development.

Ryan is also an experienced entomologist and specialises in pollinator insects and Diptera (True flies). He has recently been working for ESB and Bord na móna as a Marsh Fritillary surveyor on large scale renewable energy projects. Ryan is experienced in working in a team environment and has a history of collaborating with participants on research projects. He has published numerous papers in peer reviewed journals on terrestrial invertebrates in Britain and Ireland such as added numerous species to the Irish list and rediscovered a rare species of Sphaeroceridae *Minilimosina secundaria* (Duda, 1918) which was thought to be extinct in Britain. He is national verifier for Craneflies and Rhinophoridae (UK & Ireland), Diptera (Northern Ireland), various Diptera families for the republic of Ireland (NBDC).

EXPERIENCE

March 2022 – Present Jennings O'Donovan & Partners Limited

- **Dyrick Hill Wind Farm, Co. Waterford (74MW)**
EIAR and SID Planning Application to An Bord Pleanála. **Project Manager**
- **Kellystown Wind Farm, Co. Louth**
Planning Permission and Environmental Impact Assessment Report (EIAR) on this 5 turbine Wind Farm. **Project Manager**
- **Cloonbard Wind Farm, Co. Roscommon**
Planning Permission and Environmental Impact Assessment Report (EIAR) on this 8 turbine Wind Farm. **Project Manager**
- **Other responsibilities**
 - Report writing such as in house chapters of Environmental Impact Assessment Reports (EIAR) Construction Environmental Management Plan (CEMP).
 - Liaising with stakeholders and relevant national organisations for renewable energy scoping enquires.
 - Training in ecological monitoring surveys such as Bats through CIEEM and Fresh Water Pearl Mussels (*Margaritifera margaritifera*)

Sundew Solar - Timahoe North Ecological Services - June 2022 – Present

Project Management of the subcontracted JOD ecologists and schedule of works Lepidoptera specialist services monitoring Marsh Fritillary and Small Skipper Populations for large solar farm.

Bord na Móna – Derrinlough Wind Farm - October 2022

- Lepidoptera specialist services monitoring Marsh Fritillary Populations for large scale wind Farm development wind Farm.

Mayo County Council August- Housing Developments - October 2022

- Bat Specialist services Preliminary Bat Roost Assessments, Dusk and Dawn emergence surveys.

National Biodiversity Data Centre April 2023 – Present

- Pollinator Surveyor on NPWS site Ardnamona Wood, Co Donegal in a sessile Oak native broad-leaved woodland.
- Field surveys include Pan Trap Monitoring, 1km Butterfly/bumblebee and 1km Solitary bees/Hoverflies transect, Fit Counts and ad hoc field surveying.

National Parks and Wildlife Service – June 2022

- Short term contract surveying rare and under-recorded pollinators these include Bumblebees, Solitary Bees, Solitary Wasps and flies on the sand dune systems in the southeast of Ireland.
- All records have been added to the National Biodiversity Data Centre.

Ryan Mitchell CV (cont'd)

Oxford University Natural History Museum - Collections Assistant- November 2019 – December 2021

- Heritage Lottery Fund project rehousing a million insects in the Hope Collection housed in the Westwood room in the Oxford University Natural History Museum.
- Working with British historic specimens including type specimens on a day-to-day basis includes specimen rehousing, repair, documentation, and sorting to latest checklist arrangement.
- Public engagement presenting talks such as Spotlight specimen, talking to public at various events about museums role in conservation and wider society, assisting with the public engagement team with enquires. Provided information for social media posts on Facebook, Twitter and Instagram.

Oxford University Darwin Tree of Life Genome Project August 2021

- Collecting and identifying terrestrial invertebrates for the Darwin Tree of Life project at Whytham Wood, Oxfordshire.

Natural History Museum, London, Darwin Tree of Life Genome Project April 2020– September 2021

- Collecting and identifying terrestrial invertebrates for the Darwin Tree of Life project at various nature reserves around the UK.
- Attending collecting field trips to assist with field collection of invertebrates for the project such as the field trips such as the Dipterist Forum summer field meeting to Falmouth in Cornwall Hartslock Nature Reserve, Oxfordshire 30th July 2020 and multiple times to Cothill Fen NNR.

Allen & Mellon Environmental - September 2019

- Short-term Contract pollinator surveys at decommissioned quarry sites in Belfast area.
- Producing species lists for under-recorded sites with Data sent to Centre of Data for Environmental and Recording.

Buglife Northern Ireland, Fieldwork Surveyor September 2018

- Entomology fieldwork which included setting and collecting various equipment such as pitfall traps, Malaise traps, Bottle Traps. General fieldwork techniques such as sweeping with a focus on collecting Arachnids, Coleoptera, Diptera, Hemiptera, Orthoptera.

Trainee Natural Sciences Curator, NMNI Northern Ireland June 2018 – July 2019

- One year training program with a focus on the entomology collections.
- Included a week training at Oxford University Natural History Museum.
- Outreach events such as Bioblitz, Autumn Wildlife Day, bug hunts, behind the scenes tours.
- Documentation, field collection, collection care.
- Attended meetings such as the Irish Entomological meeting, Insect collection managers group and NatSca AGM

PUBLICATIONS

- Sivell O, Sivell D, Mitchell R et al. The genome sequence of a soldierfly, *Stratiomys singularior* (Harris, 1776) [version 1; peer review: awaiting peer review]. Wellcome Open Res 2024, 9:646 (<https://doi.org/10.12688/wellcomeopenres.23294.1>)
- Sivell O, Mitchell R, Raper C *et al.* The genome sequence of a tachinid fly, *Linnaemya vulpina* (Fallén, 1810) [version 1; peer review: awaiting peer review]. Wellcome Open Res 2024, 9:643 (<https://doi.org/10.12688/wellcomeopenres.23296.1>)
- Mitchell R, Sivell O, Natural History Museum Genome Acquisition Lab *et al.* The genome sequence of a woodlouse fly, *Melanophora roralis* (Linnaeus, 1758) [version 1; peer review: awaiting peer review]. Wellcome Open Res 2024, 9:637 (<https://doi.org/10.12688/wellcomeopenres.23295.1>)
- Sivell O, Mitchell R, Raper C *et al.* The genome sequence of a tachinid fly, *Dexiosoma caninum* (Fabricius, 1781) [version 1; peer review: awaiting peer review]. Wellcome Open Res 2024, 9:595 (<https://doi.org/10.12688/wellcomeopenres.23193.1>)
- Sivell O, Mitchell R, Raper C *et al.* The genome sequence of a tachinid fly, *Germaria angustata* (Zetterstedt, 1844) [version 1; peer review: awaiting peer review]. Wellcome Open Res

2024, 9:578 (<https://doi.org/10.12688/wellcomeopenres.23197.1>)

- Mitchell R, Falk S, Woodcock KJ *et al.* The genome sequence of a hoverfly, *Cheilosia grossa* (Fallén, 1817) [version 1; peer review: awaiting peer review]. Wellcome Open Res 2024, 9:616 (<https://doi.org/10.12688/wellcomeopenres.23189.1>)
- Sivell O, Mitchell R, Sivell D *et al.* The genome sequence of a crane fly, *Tipula (Lunatipula) helvola* Loew, 1873 [version 1; peer review: awaiting peer review]. Wellcome Open Res 2024, 9:597 (<https://doi.org/10.12688/wellcomeopenres.23207.1>)
- Crowley LM, Sivell O, Sivell D *et al.* The genome sequence of the Red-legged Robberfly, *Dioctria rufipes* (Scopoli, 1763) [version 1; peer review: 1 approved]. Wellcome Open Res 2024, 9:572 (<https://doi.org/10.12688/wellcomeopenres.23072.1>)
- Crowley LM, Mitchell R, Spilling C *et al.* The genome sequence of Willughby's leafcutter bee, *Megachile willughbiella* (Kirby, 1802) [version 1; peer review: awaiting peer review]. Wellcome Open Res 2024, 9:164 (<https://doi.org/10.12688/wellcomeopenres.21026.1>)
- Mitchell R, Sivell O, Sivell D *et al.* The genome sequence of the semaphore fly, *Poecilobothrus nobilitatus* (Linnaeus, 1767) [version 1; peer review: awaiting peer review]. Wellcome Open Res 2024, 9:91 (<https://doi.org/10.12688/wellcomeopenres.20947.1>)
- Sivell O, Raper C, Mitchell R *et al.* The genome sequence of a hoverfly, *Eristalinus aeneus* (Scopoli, 1763) [version 1; peer review: awaiting peer review]. Wellcome Open Res 2024, 9:69 (<https://doi.org/10.12688/wellcomeopenres.20636.1>)
- Sivell O, Mitchell R, Sivell D *et al.* The genome sequence of a hoverfly, *Brachyopa scutellaris* Robineau-Desvoidy, 1843 [version 1; peer review: awaiting peer review]. Wellcome Open Res 2024, 9:66 (<https://doi.org/10.12688/wellcomeopenres.20635.1>)
- Feeley, Hugh B. Mitchell, Ryan ; Macadam, Craig R (2024) The occurrence and dominance of an unusual male form of the stonefly *Leuctra nigra* (Oliver) (Plecoptera: Leuctridae) in Ireland - with a description of the infrasubspecific f. *Hibernica*. The Entomologist's monthly magazine. Volume 160, Number 1, 26 January 2024, pp. 67-71(5)
- Sivell O, Webb J, Mitchell R *et al.* The genome sequence of a crane fly, *Tipula unca* (Wiedemann, 1817) [version 1; peer review: awaiting peer review]. Wellcome Open Res 2023, 8:559 (<https://doi.org/10.12688/wellcomeopenres.20298.1>)
- Mitchell. R (2023) *Agathomyia cinerea* (Zetterstedt, 1852) (Diptera: Platypezidae) new to Ireland. Irish Naturalist Journal, Volume 40 p 141 -142.
- Falk S, Mitchell R, Sivell O *et al.* The genome sequence of the black-bellied cluster fly, *Pollenia amentaria* (Scopoli, 1763) [version 1; peer review: 1 approved with reservations]. Wellcome Open Res 2023, 8:466 (<https://doi.org/10.12688/wellcomeopenres.19740.1>)
- Sivell O, Sivell D, Mitchell R *et al.* The genome sequence of a leaf beetle, *Cryptocephalus moraei* (Linnaeus, 1758) [version 1; peer review: 2 approved]. Wellcome Open Res 2023, 8:467 (<https://doi.org/10.12688/wellcomeopenres.19522.1>)
- Crowley LM, Sivell O, Sivell D *et al.* The genome sequence of the Cossus hoverfly, *Volucella inflata* (Fabricius 1794) [version 1; peer review: awaiting peer review]. Wellcome Open Res 2023, 8:465 (<https://doi.org/10.12688/wellcomeopenres.19845.1>)
- Falk S, Wolton R, Mitchell R *et al.* The genome sequence of the broad-banded Epistrophe, *Epistrophe grossulariae* (Meigen, 1822) [version 1; peer review: awaiting peer review]. Wellcome Open Res 2023, 8:438 (<https://doi.org/10.12688/wellcomeopenres.19665.1>)
- Falk S, Mitchell R, Badham XR *et al.* The genome sequence of the Ragwort Fly, *Sphenella marginata* (Fallén, 1814) [version 1; peer review: awaiting peer review]. Wellcome Open Res 2023, 8:383 (<https://doi.org/10.12688/wellcomeopenres.19841.1>)
- Mitchell R, Falk S, Thomas S *et al.* The genome sequence of a conopid fly, *Thecophora atra* (Fabricius, 1775) [version 1; peer review: 1 approved with reservations]. Wellcome Open Res 2023, 8:358 (<https://doi.org/10.12688/wellcomeopenres.19902.1>)
- Mitchell R, Sivell O, Natural History Museum Genome Acquisition Lab *et al.* The genome sequence of the Locust Fly, *Stomorhina lunata* (Fabricius, 1805) [version 1; peer review: 1 approved]. Wellcome Open Res 2023, 8:330 (<https://doi.org/10.12688/wellcomeopenres.19532.1>)
- Mitchell. R (2023) *Eudasyphora cyanicolor* (Zetterstedt) (Diptera, Muscidae) Confirmed in Ireland. Dipterist Digest Volume 30 Part 1 p 50.
- Mitchell. R & Byrne. C (2023) *Platypeza hirticeps* Verrall, 1901 and *Paraplatypeza bicincta* (Szilády, 1941) (Diptera: Platypezidae) New to Ireland. Irish Naturalist Journal, Volume 39 p 98 -99.
- Feeley, Hugh B, Kennedy, B, Mitchell, Ryan and Baars, Jan-Robert (2023) ADULT STONEFLY (PLECOPTERA) RECORDS FROM IRELAND IN 2022. Bulletin of the Irish Biogeographical Society Number 46 p 48-61.
- Falk S, Sivell O, Sivell D *et al.* The genome sequence of the small spotty-eyed dronefly, *Eristalinus sepulchralis* (Linnaeus, 1758) [version 1; peer review: awaiting peer review]. Wellcome Open Res 2023, 8:269

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- Mitchell R, Sivell O, Natural History Museum Genome Acquisition Lab et al. The genome sequence of a woodlouse fly, *Phyto melanocephala* (Meigen, 1824) [version 1; peer review: awaiting peer review]. Wellcome Open Res 2023, 8:249 (<https://doi.org/10.12688/wellcomeopenres.19563.1>)
- Sivell O, Mitchell R, Sivell D et al. The genome sequence of a soldierfly, *Nemotelus nigrinus* (Fallén, 1817) [version 1; peer review: awaiting peer review]. Wellcome Open Res 2023, 8:240 (<https://doi.org/10.12688/wellcomeopenres.19534.1>)
- Crowley LM, Mitchell R, University of Oxford and Wytham Woods Genome Acquisition Lab et al. The genome sequence of the Common Snout Hoverfly, *Rhingia campestris* (Meigen, 1822) [version 1; peer review: 1 approved with reservations]. Wellcome Open Res 2023, 8:100 (<https://doi.org/10.12688/wellcomeopenres.19036.1>)
- Crowley LM, Mitchell R, University of Oxford and Wytham Woods Genome Acquisition Lab et al. The genome sequence of the Lesser Hornet Hoverfly, *Volucella inanis* (Linnaeus, 1758) [version 1; peer review: 3 approved]. Wellcome Open Res 2023, 8:69 (<https://doi.org/10.12688/wellcomeopenres.18897.1>)
- Sivell O, Mitchell R, Sivell D et al. The genome sequence of a snail-killing fly, *Pherbina coryleti* (Scopoli, 1763) [version 1; peer review: 2 approved]. Wellcome Open Res 2023, 8:30 (<https://doi.org/10.12688/wellcomeopenres.18790.1>)
- Mitchell. R (2022) Recent records of *Parasetigena silvestris* (Robineau-Desvoidy) (Diptera, Tachinidae) in Berkshire V.C 22. Dipterist Digest Volume 29 Part 2 p230-232.
- Mitchell. R (2022) *Agathomyia lundbecki* Chandler in Shatalkin 1985, (Diptera, Platypezidae) New to Ireland and other Platypezidae records. Irish Naturalist Journal, Volume 38 Part p 52-54
- Brice. D & Mitchell. R (2021) Recent Records of *Minilimosina secundaria* (Duda, 1918) (Diptera, Sphaeroceridae) from Berkshire. Dipterist Digest Volume 28 Part 2 p 171-173
- Mitchell. R & Raper. C (2020) Recent sightings of *Chrysosomopsis aurata* (Fallén) (Diptera, Tachinidae). Volume 27 Part 2: p220–222
- Mitchell. R (2019) *Noriella spinipes* (Meigen) (Diptera; Scathophagidae) New to Ireland. Irish Naturalist Journal, Volume 36 Part 2, p150
- Mitchell. R (2019) *Thaumtogelis audax* (Olivier) (Hymenoptera, Ichneumonidae) presence in Ireland confirmed. Irish Naturalist Journal, Volume 36 Part 2, p151
- Mitchell, R & Falk. S (2019) recent records of *Sarcophaga villeneuve* (Bottcher) (Diptera, Sarcophagidae). Dipterist Digest Volume 26 Part 2, p55–56
- Mitchell. R (2019) *Carcelia puberula* (Mesnil) (Diptera, Tachinidae) New to Ireland. Dipterist Digest Volume 26 Part 2 p3
- Mitchell. R (2018) *Themira gracilis* (Zetterstedt) (Diptera, Sepsidae) New to Ireland. Dipterist Digest Volume 25 Part 1 p78

Curriculum Vitae

Sarah Moore *MSc, BSc*



Profession

Environmental Consultant

Position with firm

Environmental Consultant

Years of Experience

18

Educational Qualifications

- MSc Environmental Engineering, Grade 1.1 Honours, Queens University, Belfast, 2007
- BSc Environmental Science, Grade 2.1 Honours, University of Limerick, 2004

KEY HIGHLIGHTS

Sarah is an Environmental Consultant with 18 years experience. She is proficient in the use of ArcGIS Pro and Microsoft Office Programmes including Excel, Word and PowerPoint. She completed Project Management Certification.

EXPERIENCE

Sept 2018 – Present **Jennings O'Donovan & Partners Limited**

- **Clooncunny, Co Sligo (10 WTG)**
Planning Permission, Environmental Impact Assessment Report (EIAR) and Public Consultation on this Wind Farm in Co. Sligo. The total output and whether the application will be to the Local Authority or An Board Pleanála is to be confirmed. Consultation with relevant statutory authorities and other stakeholders. Management of specialist sub-consultants necessary to support the EIAR submission. **Project Manager**
- **Gortyrähilly Wind Farm, Co. Cork (14 WTG)**
SID Planning Permission, Environmental Impact Assessment Report (EIAR) and Public Consultation on this 14 turbine Wind Farm. Consultation with relevant statutory authorities and other stakeholders. Management of specialist sub-consultants necessary to support the EIAR submission. **Deputy Project Manager**
- **Tullynamoyle Wind Farm Extension, Co. Leitrim**
Preparation of planning application for a four turbine extension including EIAR, Request for Further Information (RFI) response and a response to An Bord Pleanála following a Third-Party Appeal. **Senior Environmental Scientist**
- **Various Wind Farm Planning Applications in Republic of Ireland and Northern Ireland**
Preparation of Construction Method Statements (CMS) Construction and Environmental Management Plans (CEMP) including technical schedules such as Spoil Management Plan, Waste Management Plans, Surface Water Management Plans, Water Quality and Inspection Management Plans etc. to accompany wind farm planning applications and for planning compliance following the grant of planning permission. **Senior Environmental Scientist**
- **Cregg Wind Farm, Co. Cavan:**
Preparation of CEMP and CMS reports for the installation of 7 no. turbines with a maximum overall height for each turbine of 125m. **Project Manager**
- **Site Security and Welfare Facilities for various Irish Water Sites**
Preparation of environmental reports including EclAs, Environmental Reports, NIS and Invasive Species Survey Reports for up to fifty sites. **Senior Environmental Scientist**
- **Ramelton/Milford/Rathmullan Sewerage Scheme:**
Preparation of environmental reports including EclAs, Environmental Reports, NIS and Invasive Species Survey Reports. **Senior Environmental Scientist**
- **Galway Social Housing Project, Galway County Council**
Preparation of Appropriate Assessment Screenings and Invasive Species Survey Reports for social housing sites in various locations in Co. Galway. **Senior Environmental Scientist**
- **IDA Business Park, Co. Sligo**
Completed Invasive Species Surveys across the site. Preparation of an Invasive Species Management Plan. Procured and managed an invasive species contractor for the site. **Senior Environmental Scientist**
- **GIS Support, Energia**
Preparation of drawings using ArcGis Pro to accompany Foreshore License Applications for offshore wind farm. **Project Manager**

Sarah Moore CV (cont'd)

- **GIS Support, Leitrim County Council**

Preparation of maps and data extrapolation to support the County Development Plan. **Project Manager**

**Oct 2007 – June 2016 AECOM (Formerly URS Ireland Limited, Dublin)
Environmental Consultant**

Key responsibilities included:

- Groundwater and soil sampling
- Environmental Site Assessment
- Planning conditions compliance monitoring
- Supervision of site work e.g. drilling
- Report writing
- On-site liaison and Client support
- Preparation of Health & Safety Plans (Risk Assessments)
- Management of on-site Health & Safety (Inductions, tool-box talks, ensure correct PPE worn etc)
- Data management for large projects
- Site Investigation and Remediation (SIR)
- Quantitative Risk Assessment (QRA)
- IPPC compliance monitoring
- Well construction and rehabilitation

- **Various ESB Sites (incl. Bellacorrick, Lanesborough, Moneypoint, Poolbeg)**

Key responsibilities included:

- Trial pitting and soil sampling
- Supervision of groundwater well installation and geotechnical logging
- Groundwater sampling
- Surface water sampling

- **Alkermes – Secondment to the EHSS Department**

Key responsibilities included:

- Managing the collection and analysis of water, groundwater and air samples to comply with IPPC requirements
- Monitoring of on-site treatment systems
- Review of results and report collation
- Investigating and reporting non-compliances
- Liaising with Laboratories if results are out of trend
- Submitting quarterly reports to The County Council and EPA
- Preparation of the AER and PRTR
- Site walkdowns and Risk Assessments
- Preparation of SOP's
- Training

- **Pollutant Release and Waste Transfer Register (PRTR Project) – Secondment to Environmental Protection Agency (Wexford and Castlebar)**

Key responsibilities included:

- On-site support for the PRTR project
- Answering any queries relating to AER s and PRTR received from EPA licensed facilities (e.g. Waste, UWWTPs, Pharma Chem, Food and Drink etc) received through the AER Helpdesk
- Validating annual PRTR data
- Following up with facilities where errors were found during validation
- Data management and Trend analysis
- Writing progress reports for EPA senior Inspector
- Preparation of annual Reports, Preparation of Guidance Documents for licensed facilities

- **ABB Project (EXXON Mobil Sites)**

Key responsibilities included:

- Coordination and Supervision of Nationwide Site Investigations (Trial pits, drilling, well installations)
- Soil and Groundwater sampling
- Logging Soil profiles in accordance with BS5930:1999 and BS EN ISO 14688
- Scheduling and tracking of large volumes of water and soil samples
- Data Management and interpretation
- Report Writing and Remediation design proposals

Sarah Moore CV (cont'd)

- **Corrib Gas-Line Project (Tideway BV Dredging Contractors) June 2008 – Nov 2008**

Key responsibilities included:

- Environmental advisor to Tideway BV
- Implementation of Environmental and Health and Safety policies and procedures
- Environmental Induction for all Tideway personnel
- Tool-box Talks

- **IPPC Facility Compliance Monitoring at Various Sites including Pharmaceutical and Manufacturing Facilities**

Key responsibilities included:

- Supervision and Implementation of IPPC compliance monitoring
- Quarterly monitoring of groundwater
- Intrusive investigation of contamination sources
- Proactive reporting and communication of any environmental improvements required on site
- Reporting on the results of monitoring for EPA reporting

Aug 2004 – Aug 2005:

**Thomson Scientific, Limerick
Scientific Indexer**

Key responsibilities included:

- Indexing of scientific journals to make them searchable on the internet

Jan 2003 – Sept 2003:

**Garrett Engine Boosting Systems, Waterford
Environmental Coordinator with the HSE Department (Student Placement)**

Key responsibilities included:

- Designed and implemented in-house environmental monitoring regime
- Routine environmental site inspections
- Waste Audits and management of waste transferred off-site
- Document Control
- Introduction of a new Du Pont Safety system
- Co-ordinate with Maintenance Department to ensure safety issues were dealt with immediately e.g. broken lights on forklift etc

DR BRIAN MADDEN - CURRICULUM VITAE

29 La Touche Park, Greystones, Co. Wicklow
Phone/Fax: (353) 1-2875249 Email: maddenbio20@gmail.com

Profile

Brian Madden is a terrestrial ecologist and ornithologist.

After studying Natural Sciences at Trinity College Dublin, Brian was awarded a Doctor of Philosophy (PhD) degree from the National University of Ireland for his research on ecosystem processes in raised bogs.

A period was then spent as a research fellow at Trinity College, investigating the causes of nuisance green algal growths in Dublin Bay (part of Dublin Bay Management Plan).

Brian then worked with the National Parks & Wildlife Service on the national re-survey of Areas of Scientific Interest. This work culminated in the selection of sites for designation as Natural Heritage Areas (NHAs), Special Areas of Conservation (SACs) and Special Protection Areas (SPAs).

In 1994 the consultancy BioSphere Environmental Services (BES) was formed to provide environmental expertise for planning applications and environmental impact assessments, and, latterly, Appropriate Assessments. Brian Madden is the general manager and senior ecologist. BES has contributed to over 700 projects, including road schemes, wind energy projects, landfill monitoring, pipeline projects (water, gas), industrial developments, airports, flood relief programmes, business parks etc. BES regularly carries out assignments for the National Parks & Wildlife Service, which have included the National Peregrine Survey and the Breeding Wader Survey of Machairs (Annex I priority habitat) in Western Ireland.

Brian is an experienced ornithologist and has worked on most bird species which occur in Ireland. The Hen Harrier is a species of particular conservation concern and Brian is currently carrying out research into the potential conflict between Hen Harriers and wind farms.

Brian is an experienced expert witness at Oral Hearings and has prepared submissions for High Court and Supreme Court hearings. He has published extensively in the scientific literature (including book co-authorship).

Qualifications

- B.A. (Mod.), Natural Sciences, 1984, University of Dublin, Trinity College.
- Ph.D. 1990, National University of Ireland, University College Dublin.

Ph.D. Research

Study of primary productivity and nutrient cycling at a raised bog in County Offaly. Supervised by Prof. G.J. Doyle, University College, Dublin. 1984-1989.

Professional Membership

Full member Chartered Institute of Ecology and Environmental Management (CIEEM)

Distinction

In 1999 appointed independent scientific advisor to the Designated Areas Appeals Advisory Board. Board was set up on a non-statutory basis to make recommendations directly to the Minister of the Environment, Heritage & Local Government in cases where landowners object on scientific grounds to the inclusion of their land in Special Areas of Conservation, Special Protection Areas and Natural Heritage Areas.

Present Position

Environmental Consultant managing Biosphere Environmental Services.

Sample Relevant Projects

- **Oweninny Wind Farm, Co Mayo** – Since 2010, BES has been involved in the EIS preparation, pre-construction phase, and construction phase. Project granted permission by ABP in June 2016, with Oral Hearing in 2014. Phase 1: 29 turbines now operational. Phase 2 commenced in March 2021. The ecological and environmental studies have included habitat assessments, winter and summer bird surveys, bat survey, mammal survey, mitigation for breeding birds, badgers, water quality, SAC on-site, etc. Rehabilitation Plan (as a planning condition) put in place in late 2019. BES prepared an NIS for project. Ongoing project. Client: Powergen (ESB & Bord na Móna)
- **Grousemount Wind Farm and Grid Connection Route, Cos. Cork/Kerry** – Since 2010, BES has been involved in the EIS preparation, pre-construction phase, and construction phase. Granted permission by ABP in July 2016. The 38 turbine project is now operational. The ecological studies have included winter and summer bird surveys, Red Grouse surveys under licence, monitoring and mitigation for White-tailed Eagle, monitoring and mitigation for Kerry Slug (under licence), advise on removal of Rhododendron from work areas etc. BES prepared an AA Screening Report for project. Ongoing post-construction monitoring focused on White-tailed Eagle. BES has also surveyed the 110kV grid connection route (c.31 km) from Grousemount to the Ballyvouskil 220kv Substation. Part of the cable route was through the Mullaghamish to Musheramore SPA. Client: ESB International.
- **Letteragh Wind Farm, Co. Clare** - BES carried out the ecological assessments for EIS preparation, pre-construction phase and construction phase (complete in 2019) for 6 no. turbine development. Particular focus was on Hen Harrier. BES has been contracted by the wind farm operator to carry out post construction bird monitoring on site (2020 onwards) SeaHound Wind Development Ltd. (working with Jennings O'Donovan, Consulting Engineers)
- **Castlepook Wind Farm, Co. Cork** - BES has been involved in the EIS preparation, pre-construction phase, construction phase and post construction phase (ongoing). The 14 turbine project was complete in spring 2019. Studies have included focused surveys for Hen Harrier (breeding pair on site). BES also prepared a detailed Habitat Enhancement Plan (now in force) to improve conditions on site for Hen Harrier. . BES prepared an AA Screening Report for project. Post construction monitoring includes carcass search for birds and bats using trained dog. Ongoing project. Client: ESB International/Coillte.
- **Grouselodge Wind Farm, Co. Limerick** - BES has been involved in the EIS preparation, pre-construction phase, construction phase and post construction phase (ongoing). The 6 no. turbine

project became operational in 2012. As part of site is within a Special Protection Area, detailed studies were carried out for Hen Harrier with annual monitoring continuing. BES also prepared a detailed Habitat Enhancement Plan (now in force) to improve conditions for Hen Harrier. Ongoing project. Client: ESB International.

- **Cappawhite B (Milestone) Wind Farm, Co. Tipperary** - BES carried out the habitat, bird and bat studies for EIS preparation, pre-construction phase, construction phase and post construction phase (ongoing), including Habitat Management Area for Hen Harrier, for this 5 no. turbine development. Post construction monitoring includes carcass search for birds and bats using trained dog. Ongoing project. Client: ABO Wind Ireland. .
- **Eglish Wind Farm, Co. Tyrone** - BES carried out ecological studies for EIS preparation, pre-construction bird surveys, construction phase and post construction phase (ongoing) for 6 no. turbine development. BES also prepared a detailed Habitat Management Plan for an area of bog on site. Client: ESB International.
- **Carrickatane Wind Farm, Co. Tyrone/Derry** - BES carried out ecological assessments for EIS preparation, pre-construction phase, construction phase and post construction phase (ongoing) for 9 no. turbine development. BES also prepared a detailed Habitat Management Plan for habitats on site. Client: ESB International.
- **Ballycumber Wind Farm, Co. Wicklow** - BES has been involved in the ecological studies for EIS preparation and post construction bird monitoring for this 6 no. turbine development. Ongoing project. Client: Ballycumber Wind Farm (in association with Jennings O'Donovan, Consulting Engineers).
- **Raheenleagh Wind Farm, Arklow, Co. Wicklow** - BES has been involved in the ecological studies for EIS preparation for this 11 no. turbine development which became operational in 2016. Also involved in grid connection route. Client: ESB/Coillte.
- **Yellow River Wind Farm, Rhode, Co. Offaly** - BES has been involved in the ecological studies for EIS preparation and pre-construction phase. Studies have included focused surveys for Whooper Swans. Ongoing project. Client: Greenwind Energy (in association with Jennings O'Donovan, Consulting Engineers).

Bruno Mels BSc, MSc



CAREER HISTORY

Ecologist

Woodrow Sustainable Solutions
March 2024 - present

Ecologist Assistant / Data Coordinator

Woodrow Sustainable Solutions
Sep 2022 – March 2024

Media and Database Officer
Seychelles Island Foundation
Jan 2020 – Oct 2021

Research Assistant

Lower Breede River Conservancy Trust
May 2019 – Jan 2020

Conservation Assistant Manager

Cousine Island
Feb 2019 – May 2019

EDUCATION

MSc in Biology –

Biodiversity: conservation & restoration

University of Antwerp
2012 – 2015

Thesis: assessing the habitat preference of the hazel dormouse in Voeren (Belgium).

BSc in Biology

University of Gent
2009 - 2014

Final Year Project: Analysing human impact on the deepsea Wittard Canyon.

PROFILE – ECOLOGIST

Bruno joined the Woodrow team in September 2022. He obtained a MSc in Conservation Biology at the University of Antwerp and worked for several conservation organisations in South-Africa and Seychelles after his studies. His main duties there were to monitor the breeding success of shorebirds and ensure the protection of endangered species such as the green turtle and the Aldabra giant tortoise. Bruno was also involved with the data analyses, using GIS software and statistical software R, for several peer-reviewed papers and projects.

Besides being a biologist, Bruno is also a self-taught digital illustrator. He is capable of creating infographics, animations and, among others, has designed several information boards for UNESCO world heritages sites in the Seychelles.

EXPERTISE

Ecological Surveying & Mapping | Data Analysis | Digital illustrations | Animations

RELEVANT EXPERIENCE

Ecological Surveying, Data Analyses & Mapping.

- Reptile surveys including deployment of reptile refugia mats.
- Research and desk studies.
- Bat transects and dusk/dawn surveying according to best practice guidelines.
- Trip camera deployment and analysis.
- PIT-tagging.
- Shore bird surveys and following up breeding success.
- Mosquitofish monitoring in estuaries and rivers.

Design

- Vector illustrations in Adobe Illustrator.
- Photo editing in Adobe Photoshop.
- Animating in Adobe After Effects.
- Working with Audiofiles in Adobe Audition.
- Creating document layouts in Adobe Indesign.

RECEIVED: 04/12/2024

Louth Planning Department - Planning Applications Only

Bruno Mels BSc, MSc

PROFESSIONAL TRAINING & QUALIFICATIONS

- Full clean European Driving Licence.
- Certificate Experimenter cat C.
- Full Bat Derogation Licence

CONTRIBUTIONS

- Population ecological research of the hazel dormouse in Voeren (Belgium) 2013 and 2014
- Nest site selection and use of other habitats by the hazel dormouse (*Muscardinus avellanarius*) in Voeren (Belgium). 2017
- The IUCN Red List of Threatened Species. Assessment for *Mops pusillus* 2020
- Cilingir F, A'Bear Luke, Hansen D, Davis L, Bunbury N, Ozgul A, Croll D, Grossen C. 2022. Chromosome-level genome assembly for the Aldabra giant tortoise enables insights into the genetic health of threatened population. *GigaScience* 11

Reporting & Analysis

- Mapping and data analyses with ArcGIS and QGIS.
- Data management using Excel and Access.
- Statistical analysis and modelling using R.
- Habitat suitability models in R and Maxent.
- Species population modeling in Stella.
- Creating vertical river profiles in Ocean Data Viewer.
- Accoustic analyses with Kaleidoscope.

PUBLICATIONS

Peer-review papers

- Brown M, Arendse B, Mels B and Lee ATK. 2019. Bucking the trend: The African Black Oystercatcher as a recent conservation success story. *Ostrich*, 90(4)
- Arendse B, Dawson P, Mels B and Brown, M. 2023. Long term trends for Citizen Scientists: 24 years of breeding success data of African Oystercatchers, *Haematous moquini*, in the Garden Route. *Ostrich*, 94(3), 1758-185.
- Sanchez C, Bunbury N, Mortimer J, A'Bear L, von Brandis R, Burt A, Cooke L, van de Crommenacker J, Currie J, Doak N, Fleisher-Dogley F, Mederic E, Mels B, Pistorius P, Richards H and Casale P. 2023. Growth rate and projected age at sexual maturity for immature hawksbill turtles and green turtles foraging in the remote marine protected area of Aldabra Atoll, Seychelles. *Marine Biology* 170(49).
- Sanchez C, Bunbury N, Mortimer J, A'Bear L, Appoo J, Betts M, von Brandis R, Cook L, van de Crommenacker J, Currie J, Doak N, Fleischer-Dogley F, Mahoune T, Mederic E, Mels B, Pistorius P, Richards H, Samedi U, Casale P. [In Publication]. Small-scale movements and site fidelity of two sympatric sea turtle species at a remote atoll. *Marine Biology*

Frederico Hintze BSc, MSc, PhD



CAREER HISTORY

Ecologist

Woodrow Sustainable Solutions
May 2023 –

Postdoc/Project's AI

Federal University of Pernambuco & Chico Mendes Institute for Biodiversity Conservation – Carajás (Brazil)

Visiting

Researcher/Researcher/PhD candidate

Federal University of Pernambuco (Brazil)
Aug 2014 – Apr 2021

Visiting

Researcher/Researcher/PhD candidate

Federal University of Pernambuco (Brazil)
Aug 2014 – Apr 2021

Biologist/Ecologist

Portuguese Wildlife Society
Apr 2010 – Aug 2014

EDUCATION

BSc in Biology-Geology

University of Minho, Portugal.
2007 – 2011

Final Year Project analysing bat activity and richness in a 300-year old monastery (Mosteiro de Tibães).

PROFILE – GRADUATE & ASSISTANT ECOLOGIST

Frederico Hintze is an Ecologist with Woodrow Sustainable Solutions.

He is a Bachelor of Science in Biology-Geology and a Master in Ecology from the University of Minho (Portugal), and later earned his PhD in Animal Biology from the Federal University of Pernambuco (Brazil). These challenging and varied courses allowed Frederico to obtain valuable experience in habitat surveying techniques and knowledge of ecological assessment. Frederico actively participated in over 10 Environmental Impact Assessment (EIA) projects in Portugal, working on projects related to dams, wind farms, roads, and transmission lines, mainly with bats but also Iberian wolf, birds, otter, Iberian desman, and ichthyofauna. During his academic journey, he has authored over 15 scientific publications and sampling event datasets. I have also actively participated as an instructor and lecturer in various advanced courses, workshops, scientific dissemination activities, and extension programs. While Frederico's specialization lies in bat bioacoustics, he also possesses experience in GIS and Species Distribution Modeling. Moreover, he is skilled in bat capture, handling, and the search and monitoring of roosts. Additionally, he has experience in sampling biological materials such as tissues, blood, and feces, applied to studies on species' natural history, ecology, behavior, and conservation management.

As a new Woodrow member, he will be undertaking and leading bat surveys to current industry best practice and inform Ecological Impact Assessment and surveys to inform AA/HRA reporting. He also be involved in analysing bat data and improve and keep procedural protocols updated.

EXPERTISE

Bioacoustics surveys and analysis | Bat sampling and monitoring | Ecological Surveying | Mapping | Reporting & Analysis |

RELEVANT EXPERIENCE

Fieldwork

- Bat acoustic surveys and monitoring (active and passive), employing several types of detectors, for several types of studies.

RECEIVED: 04/22/2024

Low-CO₂ Planning Database Only

Frederico Hintze BSc, MSc, PhD

EDUCATION (cont.)

MSc in Ecology University of Minho, Portugal. 2012 – 2014

Thesis evaluating the impact of agricultural dams on bat populations in North-eastern Portugal.

PhD in Animal Biology

Federal University of Pernambuco, Portugal. 2016 – 2020

Thesis evaluating the integration of bioacoustics and species distribution models to enhance knowledge on the distribution of Neotropical bat species.

PROFESSIONAL TRAINING & QUALIFICATIONS

- Full Clean Portuguese Driving Licence
- Environmental epigenetics and risk assessment: challenges and future perspectives (2023) CESAM, University of Aveiro, Portugal
- Functional Supramolecular Polymeric Biomaterials (2023) SupraLife, University of Aveiro, Portugal
- Principles of Underwater Acoustics (2014) Seiche Measurement & University of Bath, UK
- Acoustics and the Marine Environment (2014) Seiche Measurement & University of Bath, UK
- Introduction to Entomology (2013) CESAM, University of Aveiro, Portugal

- Bat surveys and monitoring for several types of roosts (underground, forest dwelling, and buildings), employing both observation techniques and thermal imaging, for several type of studies.
- Bat and avian carcass searches for operational transmission lines.
- Iberian wolf transect surveys.
- Camera trap deployment and analysis for wolf and other carnivores monitoring.
- Otter & Iberian desman surveying.
- Electric fishing for ichthyofauna monitoring.
- Research and desk studies.

Desk & Analysis

- Bioacoustics analysis using BatSound, Raven Pro, Kaleidoscope Pro, and other software.
- Mapping and species modelling with ArcGIS, QGIS, and MAXENT.
- Data management and analysis using Excel and Origin Pro.
- Statistical analysis using PAST4, STATA, and basic skills in R.
- Assisting with input and writing for Environmental Impact Assessment (EIA) reports.
- Scientific writing, reviewing, and publication.

Volunteering

- Brazilian Bat Research Society (SBEQ, Brazil): responsible for coordinating the elaboration of protocols for bat studies using acoustics, creating and curatorship of the national bat vocalization library, and managing and conducting bat bioacoustics courses and related extension activities.
- Quiaios Marine Animal Rehabilitation Center (CRAM-Q, Portugal): support at the center in carrying out the rehabilitation animal care tasks, Apr 2010-Aug 2014
- Portuguese Institute for Nature Conservation and Forests (ICNF, Portugal): Bat acoustics and roost surveys for the Portuguese Bat Atlas, Jan 2011-May 2013.

Frederico Hintze BSc, MSc, PhD

PROFESSIONAL TRAINING & QUALIFICATIONS (cont.)

- An Introduction to Using GIS In Marine Biology (2012) Marine Biology & Conservation Studies Scientific Commission, University of Aveiro, Portugal
- ANABAT Training Courses: Level I, II & III (2011) Portuguese Wildlife Society, University of Minho, Portugal
- Morphological Identification of Bats (2011) Institute for Nature and Biodiversity Conservation, Portugal
- Phototrapping: applications in Ecology studies] (2011) CESAM, University of Aveiro, Portugal
- Acoustic Identification of Bats (2011) CIBIO, University of Porto, Portugal
- Integrative Assessment of Aquatic Ecosystem Health (2010) CBMA, University of Minho, Portugal
- Collection of Biological Samples in Wild Birds (2010) Portuguese Association of Bird Ringers, Portugal
- Integrative Assessment of Aquatic Ecosystem Health (2010) CBMA, University of Minho, Portugal
- Presence-Absence Sampling in Wildlife Studies: Presence software] (2010) CESAM, University of Aveiro, Portugal

Scientific publication

- E. Bernard, L.T.L. Damasceno, A.V.C. Frias, **F. Hintze** (2022). Assessing the Effects of Urbanisation on Bats in Recife Area, Atlantic Forest of Brazil. Springer, Cham. DOI: 10.1007/978-3-031-13173-8_9;
- E.S.B. Leal, D.F. Ramalho, F.A.M. Soares, A.L. Costa-Pinto, A.C. Brito, **F. Hintze**, E.M. Vilar, A.M. Lopes, R. Ranulpho, S.F. Ferrari, D.Q. Guerra (2022) Bats from Alagoas state, northeastern Brazil: updated checklist based on literature, collections, and acoustic records. *Mastozoología Neotropical*.v29(2), e0613.
- R.L.M. Novaes, **F. Hintze**, R. Moratelli (2022) *Myotis lavalii* (Chiroptera: Vespertilionidae). *Mammalian Species*. v.54, p. seac003.
- M.C.S. Mancini, **F. Hintze**, R.S. Laurindo, R.M. Mello, R. Gregorin (2022) Tradition vs. Innovation: comparing bioacoustics and mist-net results to bat sampling. *Bioacoustics*. v.32, p.1 – 19.
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- P. Mota, J.V. Vingada, P. Rodrigues, N. Garrido, N. Pinto, V. Duro V, **F. Oliveira**, T. Múrias (2020). EDP Baixo Sabor: Bat Roosts - Ecological Monitoring Program (PME) (2008-2014). EDP - Energias de Portugal. Sampling event dataset. DOI: 10.15468/gugh5u;
- P. Mota, J.V. Vingada, P. Rodrigues, N. Garrido, N. Pinto, V. Duro V, **F. Oliveira**, T. Múrias (2020). EDP Baixo Sabor: Bat Roosts [acoustic sampling] - Ecological Monitoring Program (PME) (2012-2014). Version 1.2. EDP - Energias de Portugal. DOI: 10.15468/mw5xgh;
- P. Mota, J.V. Vingada, P. Rodrigues, N. Garrido, N. Pinto, V. Duro V, **F. Oliveira**, T. Múrias (2020). EDP Baixo Sabor: Bat acoustic sampling - Compensatory Measures Program (MC1) [2013-2014]. Version 1.1. EDP - Energias de Portugal. DOI: 10.15468/gg6xhc;

Frederico Hintze BSc, MSc, PhD

- P. Mota, J.V. Vingada, P. Rodrigues, N. Garrido, N. Pinto, V. Duro V, **F. Oliveira**, Múrias (2019). EDP Baixo Sabor: Acoustic Bat Monitoring – Construction and Reservoir Filling Phases [2008-2014]. EDP - Energias de Portugal. DOI: 10.15468/whkymv.
- **F. Hintze**, A. Arias-Aguilar, L. Dias-Silva, M. Delgado-Jaramillo, C.R. Silva, T. Jucá, F.L. Mischiatti, M. Almeida, B. Bezerra, L.M.S. Aguiar, M.J.R. Pereira, E. Bernard (2019) Molossid unlimited: extraordinary extension of range and unusual vocalization patterns of the bat, *Promops centralis*. *Journal of Mammalogy*. v.101, p.417 – 432.
- M.S. Mancini, R.S. Laurindo, **F. Hintze**, R.M. Mello, R. Gregorin (2019) Different bat guilds have distinct functional responses to elevation. *Acta Oecologica*. v.96, p.35 – 42.
- A. Arias-Aguilar, **F. Hintze**, L.M.S. Aguiar, V. Ruf-ray, E. Bernard, M.J.R. Pereira (2018) Who's calling? Acoustic identification of Brazilian bats. *Mammal Research*. v.63, p.231 – 253.
- E. Barbier, **F. Hintze**, A.C. Jardelino, E. Bernard (2018) First record of the bat ectoparasitic fly *Strebla proxima* Wenzel, 1976 (Diptera: Streblidae) in Brazil. *Entomological News*. v.127, p.369 – 374.
- **F. Hintze**, A. Arias-Aguilar, L.M.S. Aguiar, M.J.R. Pereira, E. Bernard (2016) Uma nota de precaução sobre a identificação automática de chamados de ecolocalização de morcegos no Brasil. *Boletim da Sociedade Brasileira de Mastozoologia*. v.77, p.163 – 171.
- **F. Hintze**, E. Barbier, E. Bernard (2016) Emballonuridae Gervais, 1855 (Chiroptera) of Reserva Biológica de Saltinho (Atlantic Forest) in Brazil, revealed by echolocation. *Check List*. v.12, p.1925.
- **F. Hintze**, V. Duro, J.C. Carvalho, C. Eira, P.C. Rodrigues, J. Vingada (2016) Influence of reservoirs created by small dams on the activity of bats. *Acta Chiropterologica*. v.18, p.395 – 408.

Profile

Jason has over 13 years' relevant industry experience in ecological assessment and has worked in both Ireland and the UK. Jason has a B.Sc. in Marine Biology and Oceanography at University of Wales, Bangor. Jason holds a lead role on numerous projects undertaken by Apem Ireland and provides technical expertise and experience for significant others. Jason's specialism is bats, having worked in this area for over 10 years. He has experience in monitoring, capture, handling, bioacoustics and impact assessment.

Since moving to Ireland Jason's work has involved coordinating, surveying, analysing data, and writing technical bat reports for numerous projects including renewables, infrastructure, landfill remediation works, urban planning applications and commercial regeneration sites. Jason is currently lead author of the 'Offshore Bat' chapters for several Environmental Impact Assessments for offshore wind developments in Ireland and is considered the company technical lead for this subject. Jason is currently a committee member of Bat Conservation Ireland and Wind Energy Ireland and a representative with the Regional Wildlife Science Collaborative for Offshore Wind (RWSC) Science Plan addressing bat research and associated scientific needs in the context of offshore wind, on behalf of Apem. Jason holds licenses to survey bats from the Department of Culture Heritage and the Gaeltacht and Natural England.

Qualifications

- CPD Certificate, Geographical Information Systems, Dublin Institute of Technology.
- BSc, Marine Biology/Oceanography, University of Wales, Bangor.
- HND Coastal Conservation with Marine Biology, Blackpool and Fylde College.

Certifications

- NE Bat License (Level 2).
- NE Great Crested Newt License (Level 1).
- R.O.I survey, photography and handling licenses for bats.
- Certificated Surveyor for Japanese Knotweed.
- Eligible for Full Membership for CIEEM.

Employment History

- 2022 to present – Principal Terrestrial Ecologist, APEM Ltd.
- 2020 to 2022 – Senior Project Ecologist, Fehily Timoney & Company.
- 2017 to 2020 – Consultant Ecologist, Environmental Resources Management.
- 2016 – Ecological Consultant, Arbtech Consulting Ltd.
- 2011 to 2017 – Freelance Ecologist, Various Projects.
- 2010 to 2012 – Freelance Junior Ecologist, Various Projects.
- 2010 to 2016 – Freelance Noise Technician, Various Projects.

Previous Project Experience

- **North Irish Sea Array (NISA), Offshore wind Farm off the coast of Co. Dublin, Meath and Louth (2023 – Present).** Bat technical lead responsible for production of the EIAR chapter for offshore bats. Lead for additional surveys during the planning process.
- **Arklow Bank Wind Park 2, Offshore wind Farm off the coast of Co. Wicklow (2023 – 2024).** Bat technical lead responsible for production of the EIAR chapter for offshore bats. Lead for additional surveys during the planning process.
- **Rijkswaterstaat (RWS) Ministry of Infrastructure and Water Management, Netherlands (2024).** Independent reviewer of Bat fatalities and Offshore Wind Guidance Workshop Report.
- **Natural England / Bat conservation Ireland (2024).** Bat Conservation Ireland representative in the Bat Migration and Offshore Wind Guidance Workshop.
- **10 Turbine Wind farm, Co. Tipperary (2024).** Ecological Lead for the project coordinating ecological technical reports for the wind farm including ornithological, mammal, habitat, bat, aquatic and botanical. Responsible for coordinating the consultation process with NPWS and other relevant consultees for ecology. Also, technical lead and review for the Natura Impact Statement and Biodiversity chapter of the EIA.
- **21 Turbine Wind Farm, Co. Cork (2023 – 2024).** Bat lead responsible for all bat surveys and surveyors. Author of the bat technical report and data analysis.

Selected Project Experience (cont.)

- **14 Turbine Wind Farm, Co. Cork (2023 – 2024).** Bat lead responsible for all bat surveys and surveyors. Author of the bat technical report and data analysis.
- **Barnadivane Wind Farm, Co. Cork (2022).** Bat technical lead responsible for all bat surveys and surveyors as part of the updated survey effort for the planning application.
- **Garryhinch Wind Farm, Co Offaly / Laois (2022).** Bat technical lead responsible for all bat surveys and surveyors.
- **Wexford Town to Rosslare Strand Greenway, Co. Wexford (2021 to 2022).** Ecological Lead for the development of a proposed greenway extending between Wexford Town and Rosslare Strand Train Station. The appointment covers PSDP, Route Selection, Preliminary Design, Environmental Assessment, including preparation of an EIAR and Natura Impact Statement. Jason's role also involves coordinating ecological surveys and managing the internal and external input to the Final reports.
- **Ballinagree Wind Farm, Co. Cork (2021 to 2022).** 20 turbine wind farm in County Cork. Author of the screening for Appropriate Assessment and Natura Impact Statement reports.
- **Guidance for Public Authorities on the Provision of Article 6(3) and Article 6 (4) of the Habitats Directive (2021 to 2022).** Public Authorities and AA practitioners require updated guidance on the Article 6(3) and 6(4) to ensure that assessments are robust and legally compliant. The existing national guidance document published in 2009 requires updating and is being reviewed to consider requirements due to the evolving case law and to ensure its alignment with European best practice. Within his current role, Jason is co-author of this document, preparing updated national guidance for Appropriate Assessment with NPWS.
- **12 Turbine Wind farm, Co. Tipperary (2021 to 2022).** Ecological Lead for the project coordinating ecological surveys for both the wind farm and grid route including ornithological, mammal, habitat, bat, aquatic and botanical. Jason was responsible for coordinating the consultation process with NPWS and other relevant consultees for ecology. He also prepared the Natura Impact Statement and Biodiversity chapter of the EIA.
- **Drehid Wind farm, Co. Kildare (2021 to 2022).** 12 turbine project in Co. Kildare originally submitted in 2018. Ecological Lead for the project coordinating ecological surveys for both the wind farm and grid route including ornithological, mammal, habitat, bat, aquatic and botanical. Jason coordinated the consultation process with NPWS and other relevant consultees for ecology. He prepared the Natura Impact Statement and Biodiversity chapter of the EIA.
- **Dyrick Hill Wind Farm, CO. Waterford (2021).** Bat technical lead responsible for all bat surveys and surveyors. Author of the bat technical report and data analysis.
- **Milltownpass Wind farm, Co. West Meath (2020 – 2022).** Bat technical lead responsible for all bat surveys and surveyors. Author of the bat technical report and data analysis..
- **Gortaloughra Wind Farm, Co Cork (2020 – 2022).** Bat lead responsible for all bat surveys and surveyors. Author of the bat technical report and data analysis.
- **Croaghaun Wind Farm, Co Carlow (2020 – 2021).** Ecological Lead for the project coordinating ecological surveys for both the wind farm and grid route including ornithological, mammal, habitat, bat, aquatic and botanical. Jason coordinated the consultation process with NPWS and other relevant consultees for ecology. He prepared the Natura Impact Statement and Biodiversity chapter of the EIA.
- **Annagh Wind Farm, Co. Cork (2020 – 2021).** Bat lead responsible for all bat surveys and surveyors including additional scope during the request for further information (RFI) stage of the planning application. Co-author of the biodiversity chapter of the EIAR and author of the bat technical report and RFI response.
- **United Utilities, Solar Farms (2016).** Feasibility study into the potential of solar farms on clean water reservoir sites. Lead ecologist responsible for the initial Preliminary Ecological Appraisal surveys, reports and client liaison, to provide input into the feasibility assessment and assessment of design alternatives for the potential development of solar farms within clean water reservoir sites.

Kevin O'Reilly BBL



ACCREDITATION

Student member

Chartered Institute of Ecological & Environmental Management (CIEEM)

CAREER HISTORY

Graduate Ecologist Woodrow Sustainable Solutions
Apr 2023 –

Solicitor Damien Tansey Solicitors, Sligo
Dec 2019 – Jun 2021

Trainee Solicitor Damien Tansey Solicitors, Sligo
Jun 2016 – Nov 2019

EDUCATION

BBL Bachelor of Business and Law First Class Honours, University College Dublin.
2012 – 2016

Professional Practice Courses I & II
The Law Society of Ireland.
2017 – 2019

MSc Environmental Management with GIS Ulster University
2021 -

PROFILE – GRADUATE ECOLOGIST

Kevin O'Reilly is a Graduate Ecologist with Woodrow Sustainable Solutions.

He obtained First Class Honours in Business and Law at University College Dublin before training and qualifying as a Solicitor with the Law Society of Ireland. He is currently completing a Masters in Environmental Management and GIS with Ulster University. He has also undertaken a number of volunteer projects to gain valuable experience in habitat surveying techniques and knowledge of environmental management and the flora and fauna of protected species in Ireland and abroad.

Since joining Woodrow, Kevin has taken part in a number of bat surveys including static detector deployment and roost surveys.

EXPERTISE

Habitat and Vegetation Surveying | Bat, Bird and Reptile Surveying | Mapping, Reporting & Analysis |

RELEVANT EXPERIENCE

Habitat and Vegetation Surveying

- Line transect botanical surveys.
- Wetland vegetation management.
- Vegetation plot monitoring.

Bat, Bird and Reptile Surveying

- Bat transect and dusk/dawn surveying according to best practice guidelines.
- Static bat detector deployment.
- Capture-Mark-Recapture reptile studies.
- Trip camera deployment and analysis.
- Bird VP surveys and walkover surveys.

Mapping, Reporting & Analysis

- Mapping with ArcGIS Pro and QGIS Statistical analysis and modelling using IBM.
- Data management using Excel.

Volunteering

- PrespaNET: Volunteering with the Society for the Protection of Prespa, the Macedonian Ecological Society, and the Protection and

Kevin O'Reilly BBL

PROFESSIONAL TRAINING & QUALIFICATIONS

- o Full Clean Irish Driving Licence

Preservation of Natural Environment in Albania on a transboundary volunteer programme in the Prespa region of Greece, Macedonia, and Albania. Jun – Jul 2022

- Birdwatch Ireland: Bird Surveys as part of the Irish Wetland Bird Survey and Garden Bird Survey. 2019 - 2021
- Vincent Wildlife Trust: Analysis of Trip Camera footage for Mustelid, Apr - Sep 2020.

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Louise Gannon BSc (Hons)



ACCREDITATION

Qualifying member

Chartered Institute of Ecological & Environmental Management (CIEEM)

CAREER HISTORY

Ecologist

Woodrow Sustainable Solutions
Mar 2024 – present

Assistant Ecologist

Woodrow Sustainable Solutions
Jul 2023 – February 2024

Graduate Ecologist

Woodrow Sustainable Solutions
Sept 2021 – Jul 2023

Student Internship

Woodrow Sustainable Solutions
Jun – Aug 2021

Zookeeper

Eagles' Flying
May to Aug 2017

EDUCATION

BSc Environmental Science

2016 – 2021

PROFILE – ECOLOGIST

Louise Gannon is an Ecologist with Woodrow Sustainable Solutions.

She graduated in Environmental Science from ATU Sligo; where she gained experience in different field survey methods, knowledge of Ecological Impact Assessments and Appropriate Assessment, and familiarity with the species and protected species of Ireland.

During her time at Woodrow, she has developed her ecological surveying skills such as surveying for bats, determining potential roost features, and analyzing bat call recordings using both Kaleidoscope and Bat Explorer. While out on surveys she looked out for signs of other protected mammals including badger and otter. She has assisted on a number of other field surveys also, including an aquatic macro invertebrate survey for water quality analysis, a White-clawed Crayfish survey, habitat and invasive species and mammal surveys.

She is highly proficient in conducting an extensive array of fieldwork surveys, year-round, and has a range of experience in various survey techniques, particularly bat surveys, and report writing.

AREAS OF EXPERTISE

Bat Surveys & Bat Call Analysis | Otter Surveys | Invasive Species Surveys | Reporting and Analysis | Ecological Surveying and Mapping | Data Analysis | Desk studies

RELEVANT EXPERIENCE

Bat Surveys & Bat Call Analysis

- Activity transect surveys
- Emergence and Re-entry Surveys
- Static detector deployment
- Preliminary roost assessments
- Bat call analysis for surveys using both Kaleidoscope and BatExplorer.

Mammal Surveys

- Walkover surveys & trip camera deployments
- Analysis of tripcam footage
- Bat casualty/carcass searches

Louise Gannon BSc (Hons)

PROFESSIONAL TRAINING & QUALIFICATIONS

- o Bat Call Identification webinars, Wildlife Acoustics
- o Safepass 2021
- o Emergency First Aid 2021.
- o Bat Derogation License 2024 - 2025

Reptile Surveys

- Walkover surveys
- Monitoring surveys deploying artificial refugia and checking these on separate visits

Invasive Species Surveys

- Identification of Invasive plant species

Other

- Water Sampling

Data Analysis

- Highly adept in bat call analysis, using BatExplorer and Kaleidoscope software.
- Proficiency using mapping software, ArcGIS, ArcGIS Pro and QGIS to present spatial data.

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Louth CC, Planning Department - View Only Purposes Only

Maeve Maher-McWilliams BSc MSc ACIEM



PROFESSIONAL ACCREDITATION

Associate member
Chartered Institute of
Ecology and Environmental
Management (CIEEM)

Member of Bat Conservation
Ireland (BCI)

Member of Bird Watch
Ireland (BWI)

CAREER HISTORY

Principal Ecologist,
Woodrow Sustainable
Solutions, Sligo 2022 -
present

Principal Ecologist, Scott
Cawley Ltd., Dublin 2019 –
2021;

Senior Ecologist, Scott
Cawley Ltd., Dublin 2017 –
2019

Senior Ornithologist, Arcus
Consultancy Services Ltd.,
Glasgow 2014 – 2016

Ornithologist, Canavan
Associates, Derry 2011-
2014

EDUCATION

**MSc Evolutionary and
Behavioural Ecology**
University of Exeter 2009 –
2010

**BSc (Hons) Biological
Sciences**, Queen's
University Belfast 2004 –
2008

PROFILE – ECOLOGICAL CONSULTANT

An experienced ecologist, Maeve Maher-McWilliams has worked for over ten years on complex environmental impact assessments and mitigation design for development projects across Ireland, Northern Ireland and Scotland.

Maeve has been involved in projects across several sectors such as renewable energy; linear infrastructure; flood relief schemes and port developments; tourism and recreation; residential, pharmaceutical and data centre development. Providing advice & recommendations throughout project lifetime from inception and due diligence, right through the planning process and into post-planning compliance.

As a project manager and field ecologist she carries out multidisciplinary surveys, habitat surveys, bat surveys, mammal surveys and specialises in ornithology surveys. She is also a skilled Ecological Clerk of Works.

AREAS OF EXPERTISE

Surveying, Monitoring & Reporting | Appropriate Assessment | Ecological Impact Assessment | Biodiversity Action Plans | Bird Surveys | Protected Species Surveys | Habitat Surveys | Ecological Clerk of Works | Project Management |

RELEVANT EXPERIENCE

Surveying, Monitoring and Reporting

- Bird surveys: Irish wetland bird surveys (I-WeBS), vantage point (VP) watches, breeding bird surveys, lowland and upland breeding wader surveys, breeding raptor surveys, winter bird surveys, hen harrier roost surveys, tern surveys, seabird watches.
- Protected species surveys: Licenced surveyor for badger, otter, red squirrel, pine marten, freshwater pearl mussel, amphibians, and bats including activity surveys, roost re-entry and emergence surveys, internal roost inspections.
- Very experienced in undertaking Ecological Impact Assessments (EIA) and reporting for Appropriate Assessment (AA) including AA Screening reports, Natura Impact Statements (NIS) and Habitat Regulation Assessments (HRA).

Maeve Maher-McWilliams BSc MSc ACIEM

PROFESSIONAL TRAINING & QUALIFICATIONS

- o Management Training (Institute of Management Ireland) 2020
- o Freshwater Pearl Mussel Stage 1&2 Surveys (Dr. Evelyn Moorkens) 2019
- o Invasive Species training (NBDC) 2018
- o Advanced Skills in EcIA (CIEEM) 2017
- o Vegetative Key Plant Identification (CIEEM) 2017
- o Bat Handling and trapping (Bat Conservation Ireland) 2017
- o Introduction to Bat Surveys (CIEEM) 2016
- o Scottish Wildcat Survey Techniques 2016
- o Pollution Prevention Training 2016
- o Environmental Advisor (CIEEM) 2015
- o Phase 1 Habitat Survey (CIEEM) 2013
- o Mountaineering Navigation and Safety Course 2012
- o Bird Survey Techniques for Ecological and Environmental Professionals (BTO) 2011
- o SOLAS Safe Pass (valid January 2026)
- o Full Irish Driving Licence

- Mitigation and management plans in relation to protection of species & valuable habitats

Ecological Clerk of Works

- Planning compliance commitments in the vicinity of or within European protected sites.
- Pre-works checks for protected species, pre-felling checks, nesting bird checks, toolbox talks, pollution monitoring, ecological monitoring and advice.
- Derogation licences submitted to National Parks and Wildlife Service (NPWS) for the derogation of bat roosts and badger setts.
- Liaison with contractors to ensure works are undertaken in line with method statements, ecological timing constraints and mitigation outlined in the EcIA.

Project Management

- Lead Ecologist on complex inter-disciplinary projects where collaboration and consultation between the entire design team is key.
- Principal contact for multi-project clients providing expert and timely advice.
- Manage survey schedules and co-ordinate the field survey team which can include several sub-contractors.
- Lead Ecologist on Appropriate Assessment Screenings & Natural Impact Statements projects.
- Organise, undertake and write EcIA's and Biodiversity and/or Ornithology EIAR chapters.
- Consultation with statutory authorities & stakeholders.
- Fee proposals & managing budgets.

Meadhbh Costigan BA MSc



PROFESSIONAL ACCREDITATION

Qualifying Member of CIEEM
Member of BSBI

CAREER HISTORY

Assistant Ecologist

Woodrow APEM Group,
Sligo, Ireland 2022-Present

Botanist

Hometree Charity
Clare, Ireland 2020 – 2022

Horticulturist

Various locations, Ireland
2016-2020

Research Associate

University of Zurich,
Switzerland
2014-2015

EDUCATION

MSc Ethnobotany

University of Kent, UK
2009 – 2011

BA Natural Science

Trinity College Dublin
2005 – 2009

PROFILE – ECOLOGIST

Meadhbh holds both a BA and MSc in Botanical Science. Her work to date has focused on plant conservation. She has experience conducting fieldwork in Ireland, Europe, North America, Central America, and South Asia.

KEY ECOLOGICAL SKILLS

Plant Identification | Habitat Classification |
Biodiversity-Net-Gain | Technical Writing |

RELEVANT EXPERIENCE

Project Management

- Experience managing small-scale HMEP's
- Experience planning surveys and leading teams in the field
- Client liaison including conference calls with various stakeholders
- Writing fee proposals as per client requirements

Botanical Surveys

- Habitat Surveys (Fossitt, IVC, NVC, Phase 1 JNCC)
- Plant identification (with a special interest in the flora of upland & lowland bogs)
- Biodiversity-Metric (biodiversity-net-gain)

Technical Writing & Mapping

- Authored NIS's, HRA's, EcIA's, HMEP's
- Knowledge of EU Directives & national conservation legislation
- Proficient in QGIS, Qfield, and Survey123

Professional Skills & Accomplishments

- Marsh Fritillary (*Euphydryas aurinia*) protected species survey license N.I.
- Authored successful EIP grant application worth €165,000 for local charity 2021
- Awarded the Marie-Curie Scholarship 2014
- Member of the APEM Environmental Committee
- Elected member of the CIEEM Irish Section Committee

Oisín O Sullivan BSc



ACCREDITATION

Qualifying member

Chartered Institute of Ecological & Environmental Management (CIEEM)

Member

Bat Conservation Ireland

CAREER HISTORY

Senior Ecologist Woodrow Sustainable Solutions
Feb 2024 –

Ecologist Woodrow Sustainable Solutions
Nov 2021 – Feb 2024

Graduate Ecologist Woodrow Sustainable Solutions
Oct 2020 – Nov 2021

EDUCATION

BSc Ecology & Environmental Biology First Class Honours, University College Cork (UCC)
2016 – 2020

Final Year Project assessed the habitat selection of bats within Cork City.

PROFILE – SENIOR ECOLOGIST

Oisín O Sullivan is a Senior Ecologist with Woodrow Sustainable Solutions.

He obtained First Class Honours in Ecology and Environmental Biology from University College Cork; where he gained experience in different field survey methods, knowledge of Ecological Impact Assessments and Appropriate Assessment, and familiarity with the species and protected species of Ireland.

For his final-year project he completed a survey of bat species and their habitat selection in the urban environment of Cork City. During his studies he became proficient in the use of R for data analysis and Kaleidoscope for bat call recordings and analysis.

During his time at Woodrow, he has conducted and overseen the deployment of static detector surveys, the undertaking of transect surveys, bat roost inspection surveys, bat data analysis and bat report writing.

EXPERTISE

Ecological Surveying & Mapping | Reporting & Analysis | Project / Team Management

RELEVANT EXPERIENCE

Ecological Surveying & Mapping.

- Protected species surveys specialising in bat surveys.
- Bat roost and transect surveys
- Deployment of static bat detectors
- Potential Roost Feature surveys using BCT (2023) roost potential classifications.
- Development and application of novel survey techniques for bat surveys for offshore wind in the absence of established guidance
- Research and desk studies
- Licensed bat roost inspection surveys using an endoscope and thermal imaging
- Hand netting and handling bats
- Biometric measurements and ringing for bat roost population monitoring
- Badger & otter surveys
- Marine epibiont surveys

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Oisín O Sullivan BSc

PROFESSIONAL TRAINING & QUALIFICATIONS

- o Assisted in a programme of biometric measurements and ringing for ongoing monitoring of 5000+ individual bat roost in Portugal involving 8 species. 2024
- o Bat Handling, Hand Netting & Endoscope Use Foundation Training. Batability 2023
- o Developing skills in ecological impact assessment CIEEM 2023
- o Advanced techniques in R for bat data analysis. Bat Conservation Trust 2023
- o Bat conservation trust roost mitigation masterclass 2021
- o Bat handling licenses 2023 2024
- o Bat derogation licenses 2021 2022 2023 2024
- o Safepass 2021
- o REC first aid 2023

Reporting & Analysis

- Mapping with ArcGIS and QGIS.
- Bat data analysis with Kaleidoscope Pro and Bat Explorer.
- Statistical analysis and modelling using R.
- Data management using Excel.
- Bat data analysis using Ecobat.
- Preparation of bat activity reports for EclA and EIAR assessments.

Project / Team Management

- Four years of managing the Woodrow bat team to ensure survey requirements are met for 10 - 12 wind farm sites a year, along with several quarry sites and miscellaneous building demolitions.
- Head Organiser for the 2017 Irish Nationals European Youth Parliament Session - led a team of organisers responsible for the transport, accommodation, food, and venues for the 150 people that attended the four-day event.

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Louth CC, Planning Department, Reviewing Purposes Only

Patrick Power BSc (Hons) PGCert

Profile – Assistant Ecologist



ACCREDITATION

Student member

Chartered Institute of Ecological & Environmental Management (CIEEM)

Member

Bat Conservation Ireland.
Institution of lighting professional.
Pro Silva Ireland.

CAREER HISTORY

Assistant Ecologist

Woodrow Sustainable Solutions
March 2022 – Present

Maintenance Forester and Forestry works supervisor.

Veon Ltd. 2016 - 2022

EDUCATION

PGCert in Wildlife Biology and Conservation.
Edinburgh Napier University 2023.

BSc (Hons) in Land Management in Forestry.
Waterford Institute of Technology. 2014-2016.

BSc in Forestry.
Waterford Institute of Technology. 2011-2014

Patrick Power is an Assistant Ecologist with Woodrow Sustainable Solutions.

He has obtained a BSc in Forestry and Bsc (Hons) in land Management in Forestry with Waterford Institute of Technology and PGCert in Wildlife Biology and Conservation. He has gained experience in different field survey methods, knowledge of Ecological Impact Assessments, and familiarity with the species and protected species of Ireland.

During his time at Woodrow, he has been involved with the deployment of static detector surveys, the undertaking of bat surveys, small mammal surveys and reptile surveys. Writing technical bat reports.

EXPERTISE

Ecological Surveying and Reporting | Analysis.

RELEVANT EXPERIENCE

Ecological Surveying & Mapping.

- Reptile surveying.
- Badger surveying
- Red squirrel surveying
- Protected species surveys specializing in bat surveys.
- Bat roost and transect surveys.
- Bats and lighting guidance.
- Deployment of static bat detectors.
- Potential Roost Feature surveys using BCT (2023) roost potential classifications.
- Habitat mapping with the use of Fossitt (2000).
- Research and desk studies.
- Tree woodland species identification and assessment.
- Currently training with a Licensed bat roost inspector for surveys using an endoscope and thermal imaging.
- Proficient in navigation using map and compass in all weather conditions.

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Louth CS Planning Department - Planning Cases Only

Patrick Power BSc (Hons) PGCert

PROFESSIONAL TRAINING & QUALIFICATIONS

- o Full Clean Irish Driving Licence.
- o Bat Call Identification webinars.
- o Training bat derogation licence
- o ATV driving training.
- o Coillte ERA (Environmental risk assessment) training.
- o Safepass 2022.
- o Mountain skills 1 and 2.
- o Emergency First Aid 2023.
- o R data analysis.

Reporting & Analysis

- Mapping with QGIS
- Bat data analysis with Kaleidoscope Pro 5.0 and Bat Explorer.
- Statistical analysis and modelling using R.
- Data management using Excel.

Project / Team Management

- Managed teams of workers on numerous native woodland, afforestation, reforestation and agroforestry projects.
- Training to guide people in Irish/UK mountains in all weather conditions.
-

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Louth CC, Planning Department - Planning Purposes Only

Róisín O'Connell BSc



ACCREDITATION

Qualifying member

Chartered Institute of Ecological & Environmental Management (CIEEM)

CAREER HISTORY

Assistant Ecologist Woodrow Sustainable Solutions, Apem Group, County Sligo
October 2022 – current

Seasonal Bat Surveyor Woodrow Sustainable Solutions, Apem Group, County Sligo
May 2022 – October 2022

Seasonal Bat Surveyor Scott Cawley Ecological Consultancy, County Dublin
May 2021 – Nov. 2021

Environmental Consultant Traynor Environmental Ltd., County Cavan
April 2019 – 2020.

EDUCATION

BSc Environmental Science Honours, Atlantic Technological University Sligo, Ireland.
2016 – 2020

Final Year Thesis: Documenting aquatic macrophytes & microbiological parameters as a measure of water quality in Lough Doon, Co. Leitrim.

PROFILE – ASSISTANT ECOLOGIST

Róisín O'Connell is an Assistant Ecologist with Woodrow Sustainable Solutions, Apem group.

She obtained a Bachelor of Science (Honours) in Environmental Science at Atlantic University Sligo, Ireland. Having acquired experience studying the different areas of the environment she has the training and ability to conduct surveys, to collect and compile data about the different species, their mating behaviour, and their habitats. She has the knowledge and training to use this research information to help identify and classify species and help keep track of how the different species affect the environment. Since joining Woodrow, she has been mainly involved with bat habitat surveying and data analysis, additionally, she has assisted with EclA & AA reports.

EXPERTISE

Ecological Surveying & Mapping | Reporting & Analysis |

RELEVANT EXPERIENCE

Ecological Surveying & Mapping.

- Research and desk studies.
- Deployment of static equipment to survey bat activity and species type.
- Transect and dusk-dawn surveying according to best practice guidelines.
- Habitat mapping with the use of Fossitt (2000).
- Otter & badger surveying.
- Dip well monitoring.

Róisín O'Connell BSc

PROFESSIONAL TRAINING & QUALIFICATIONS

- o Full Clean Irish Driving Licence
- o Safe pass 2023
- o CIEEM Qualifying member
- o Derogation licence
(Bat Roost Disturbance)

Reporting & Analysis

- Mapping with ArcGIS and QGIS.
- Bat analysis using Kaleidoscope and Bat Explorer software.
- Statistical analysis and modelling.
- Data management using Excel.
- Assisting with input for: Environmental Impact Report, Environmental Screening, AA and Ecological Impact Assessment (EclA) reports.
- Air Quality and Noise Surveying.

Training

Currently training to gain a license to survey bat roosts from the Department of Culture Heritage and the Gaeltacht.

Volunteering

- Wild Work Cavan: Seed Saving Project for Bailieborough local community, April 2022 – Sept. 2022.
- Bat Conservation Ireland: Surveying for the 2022 All Ireland Daubenton bat Waterways Survey, July – Aug. 2022.
- Sligo Tidy Towns: Guided Bat Walk in Doorly Park, Sligo for local community, Oct.2022.

Woodrow Sustainable Developments Ltd (Woodrow), which includes APEM Ireland as a trading name, has many years' experience in baseline ecological assessments and ecological impact assessment in relation to wind farm development. Part of the APEM Group, the company more widely has worked extensively on both onshore and offshore wind farm proposals in Ireland and globally.

Gráinne Keogh is a Senior Ecologist at APEM Ireland and holds an MSc in Marine Biology and a BSc in Ecology and Environmental Biology. Gráinne has carried out field and lab work across marine, terrestrial, and freshwater environments; these include habitat surveys and mapping, species identification, freshwater pearl mussel surveys, electrofishing surveys and chemical and biological water quality analysis including SSRS and Q Value assessments. She has previously worked on the Climate Change Mitigation Research Project in Inland Fisheries Ireland and she has also spent time at sea on research vessels conducting fisheries surveys with the Marine Institute. Grainne has a robust understanding of the impact assessment processes, and Irish and EU wildlife legislation and has written a number of Appropriate Assessments, Natura Impact Statements and Ecological Impact Assessments to support planning applications.

Dr Bláithín Ní Ainín (Senior Ecologist) holds a BSc (Hons) in Environmental Biology from University College Dublin and MSc in Environmental Science and PhD in freshwater ecology from Trinity College Dublin. She is a freshwater biologist with 18+ years of practical experience in water and environment related projects and programmes in Ireland and Australia. She has broad ranging experience including surveying and sampling rivers and lakes across Ireland (particularly using macroinvertebrate communities to determine water quality), in conducting complex research and analysis on the effects of agricultural and industrial activities on receiving waterways, and in facilitating and managing the development of strategies for waterway restoration. Bláithín has extensive skills in the fields of: Biological monitoring (particularly for water quality) including macroinvertebrate survey (both SSRS and Q value assessment); freshwater habitat assessment; freshwater pearl mussel survey and fish habitat assessment; Freshwater ecosystem health and ecological status assessment (especially for the Habitats and Water Framework Directive), freshwater invasive species impacts, control and management and in the creation of distribution maps using GIS. She has worked for the Local Authority Waters Programme in Ireland and the East Gippsland Catchment Management Authority, in Australia as well as working as a Consultant Freshwater Ecologist.

Dr Michael Dobson FLS MCIEEM is a freshwater biologist with over 35 years' experience. He spent 20 years as a research scientist, specialising in ecology and management of rivers and freshwater wetlands throughout Europe and East Africa, along with developing biotic indices for river quality assessment in Central America. He was Director of the Freshwater Biological Association for six years before joining APEM in 2013, working initially in the limnology and water quality team before setting up its dedicated invasive species team in 2019 and moving to APEM Ireland in 2022. Mike has written many peer-reviewed papers in ecology and biogeography, along with two undergraduate textbooks for Oxford University Press (both in their second editions) and seven identification guides to freshwater invertebrates of Britain and Ireland. He has extensive experience of survey design, data analysis and reporting, including publication and verbal reporting for non-technical audiences. He has written and reviewed Habitats Directive assessments in both Ireland and the UK.

Elizabeth O'Brien - Consultant Ecologist has a First Class Hons. BSc in Zoology from NUIG and a First Class Hons. MA in Ecological Design Strategy. She is experienced in a range of research and technical survey skills in terrestrial, marine, ornithology, mammals, habitats and

phylogenetics. She has a good knowledge of environmental legislation with reference to Ireland as well as the EU and the Habitats Directive. She has also previously spent time at sea conducting UWTV and Deep-Sea Trawling fisheries surveys with the Marine Institute. As a consultant ecologist for APEM, she contributes towards Ecological Impact Assessments (EclA), Appropriate Assessments Screenings (AA Screenings) and Preliminary Ecological Appraisals (PEAs).

Dr Adon McFarlane is a freshwater biologist, specialising in protected species whose PhD research was into white-clawed crayfish ecology. He is an experienced field scientist, with extensive skills in the fields of freshwater habitat assessment; freshwater pearl mussel survey; white-clawed crayfish survey, macroinvertebrate survey, fish habitat assessment and electrofishing survey. He has built up skills in the collection of data both in the field and laboratory, analysis of data using statistical software programs such as R, BORIS, RAVEN and Minitab, creation of distribution maps using GIS. Adon has very strong technical skills in both freshwater and marine laboratory and fieldwork instrumentation and equipment usage. Adon has worked on a number of ecological reports, including Appropriate Assessments, Ecological Impact Assessments (EclA), Preliminary Ecological Appraisal Reports (PEAR) and Invasive Species Reports.

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John Whiteford



Current position

1996 to present Managing

Director Whiteford

Geoservices Ltd

Previous Employment

British Geological Survey (Edinburgh)

1992

Kirk McClure Morton (Cons Eng)

1993 to 1996

Qualifications

BSc (Hons) Geophys

Professional Associations

Member European Association Of Geoscientists and Engineers (EAGE)

Affiliate Member of Institute Of Safety and Health (MIOSH)

Professional Development

IOSH Managing Safely for Construction Managers August 2013

Quality Assurance and Forensic NDE

Methods for Foundations Oct 2012

Seismic and Radar Geophysics for Engineering Applications Oct 2012

Structural NDE and Pavement NDE for

Condition Assessment and Quality Control Oct 2012

CSR (General Construction Operative)

Aug 2012

Coillte Environmental Impact

Assessment Feb 2014

Reports to

N/A

Responsible at present for

UK and Ireland

Précis Biography

John Whiteford is currently Managing Director of Whiteford Geoservices Ltd

He has the overall responsibility for the tendering and estimating departments and executor to final completion of all Civil Engineering, Geotechnical and Environmental Operations in Ireland and the United Kingdom

In his role as Managing Director, he is also responsible for the efficient management and development of a team of Project Managers, Field Engineers and operatives throughout the Division.

Other duties include the preparation of budgets, negotiating on behalf of the company and all aspects of Health and Safety, Quality and Environmental Management.

Over the years John has led the Whiteford Geoservices Team in the successful completion of a number of ground investigations for major high profile ground schemes within Ireland and Great Britain, such as Dromada and Athea Wind Farm (Ireland's largest on land wind farm), ARC II Titanic Quarter, Belfast, Construction of a new CCGT Power Station at Ballylumford, Dublin Port Tunnel, Moyle Interconnector Project,

Selected Recent Projects

- 2021 – Shannon Town Geophysical Survey – Clare County Council - **€86k**
- 2020 – GDA Navan Meath Geotechnical & Geophysical Site Investigation **€925k**
- 2019 – Maynooth Geotechnical & Geophysical Site Investigation - **€210k**
- 2018 – Diamond Jubilee Bridge – Marine Geotechnical and Geophysical Investigations - **£130k**
- 2017 – Lisahally Marine Geotechnical and Geophysical Investigations – Firmus Energy - **£289k**
- 2016 – Howth Harbour Marine Geophysical Surveys - **£30k**
- 2015 – Brockaghboy Wind Farm – Post Construction SI - **£100k**
- 2015 – Crockbaravelly Wind Farm – Post Construction SI - **£40k**
- 2015 – Upper Ballyrogan Wind Farm – Post Construction SI - **£80k**
- 2015 – Marine Geophysical Investigation at Howth Harbour - **€40k**
- 2015 – Tullnamoyle Wind Farm – Pre Planning Peat Slide Risk Assessment - **€15k**
- 2010 – 2014 – Peat Slide Risk Assessment: including Altgolan WF, Dunmore 2 WF,
- Brockaghboy 2 WF, Owenreagh III WF, Yellow River WF, Dromada Begg WF, Cloghboola WF, Meenablagh WF, Ballykeel WF, Slieveard WF, Cloghan Wind Farm, Crocknamona WF - **£620k**
- 2013 – Ground Investigation at Continental Quay, Larne Harbour - **£15k**
- 2013 – Ground Investigation at Mackeen's Quay, Larne Harbour - **£10k**
- 2012 – 2014 – CE / Irish Rail Railway Bridge Inspection Programme - **€350k**
- 2013 – ESB Networks Soil Investigations Term Contract - **€300k**
- 2013 – Ship Repair Dock, Harland & Wolff, Ground Investigation - **€120k**
- 2014 – Intertidal Marine Investigations - Neart na Gaoite Offshore WF - **£90k**
- 2012 – 2013 – Arklow Main Drainage Scheme Ground Investigation - **€365k**
- 2009 – 2014 – Pre-Planning, Planning & Appeals Consultancy – “Soils & Geology, Hydrogeology, Peat Slide Assessment, Hydrology - **£485k**

Skills

Current position

1996 to present

Managing Director

Whiteford Geoservices Limited

Previous Employment

British Geological Survey (Edinburgh)

1992

Kirk McClure Morton (Cons Engs)

1993 to 1996

Qualifications

BSc (Hons) Geophys

Professional Associations

Member European Association Of Geoscientists and Engineers (MEAGE)

Affiliate Member of Institute Of Safety and Health (IOSH)

Professional Development

IOSH Managing Safely for Construction Managers August 2013

Quality Assurance and Forensic NDE Methods for Foundations Oct 2012

Seismic and Radar Geophysics for Engineering Applications Oct 2012

Structural NDE and Pavement NDE for Condition Assessment and Quality Control Oct 2012

CSR (General Construction Operative) Aug 2012

Coillte Environmental Impact Assessment Feb 2014

Reports to

N/A

Responsible at present for

UK and Ireland

Certification:

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Client.

1. Geotechnical Engineering

Foundation Design

Loading Assessment

Planning and supervision of high quality ground investigation campaigns

2. Geophysical Surveys

Utility / Underground Service Location

Bedrock Mapping – Seismic Refraction & Resistivity Imaging

Ground Stiffness Appraisal – MASW Seismic Surveying

Thermal Rating for Underground HV Cable Installation – Thermal Resistivity Testing

Shallow Marine Geophysical Surveys – Integrated side scan, sub bottom profiling and bathymetry investigations (Ports, rivers and outfall developments)

3. Peat Slide Risk Assessment

Planning and supervision of the collection of high quality site investigation data, numerical analysis and reporting

4. Soils and Geology Consultancy

Appraisals and site analyses for the purpose of obtaining planning approval.

5. Hydrogeology & Hydrology Consultancy

Appraisals and site analyses for the purpose of obtaining planning approval.

Selected References

- Peat Slide Risk Assessment

– Mr Seamus Canavan of Canavan Associates (+44 28 71371700)

- Geotechnical Assessment

– Mr David Kiely of Jennings O'Donovan Consulting Engineers (+353 719161416)

– Mr Barry O'Kane of DW Consultancy Ltd (+353 719122025)

- Environmental Assessment

– Mr Wissie Martin of Martins Contracting Services Ltd (+44 28 93323733)

Name of Expert: John Whiteford

Signature

Date: 1st July 2021

Name of authorized: Joy McNeill

Signature

Date: 1st July 2021

Representative of the Consultant (the same who signs the Proposal)



Current Position

Senior Consultant

Qualifications

MSc Catchment Hydrology & Management (University of Dundee, 2014 - 2015)

MA (Hons) Environmental Science & Geography 1st class (University of Dundee, 2010 - 2014)

Professional Memberships

Chartered Member of the Institution of Environmental Sciences (CEnv MEnvSc)

Employment History

April 2019 - Present
McCloy Consulting Ltd.,
Belfast

(2015 - April 2019);
Fairhurst, Glasgow:
Environmental Consultant

Background

Iain holds the position of Senior Environmental Consultant with McCloy Consulting Ltd. and is a Chartered Environmentalist with remit and experience in hydrology, environmental assessment, environmental engineering, surface water management, and flood risk assessment.

Experience and Expertise

His role has included the preparation and management of environmental reports for a range of projects at various stages of the environmental impact assessment (EIA) and planning process (i.e., screening, scoping, EIA Reports / Environmental Statements, environmental permit applications, Construction Environmental Management Plans (CEMPs), Pollution Prevention Plans (PPPs), and Water Quality Monitoring Plans (WQMPs).

He has significant experience in EIA and water quality monitoring programmes in the planning stages for renewables projects, and advising applicants on planning and legal liability around water environment matters.

Health and Safety

- Construction Skills Certification Scheme (CSCS) – Professionally Qualified Person (2022)

Selected Relevant Projects

Water Environment Assessment – Cummennabuddoge Wind Farm, Co. Kerry (2024)

Responsible for undertaking baseline environmental assessments to underpin an EIAR for proposed wind farm project located adjacent and upstream of an environmentally designated site. Responsible for fieldwork, establishing hydrological constraints, and preparing EIA chapter. Prepared water quality monitoring strategy for the baseline phase of the development, managed on-going sample collection by 3rd party consultants and screening of water quality data, reviewing data against legislative limits for specified chemical parameters.

Water Environment Assessment – Clunahill Wind Farm, Co. Tyrone (2024)

Responsible for undertaking baseline environmental assessments to underpin an EIAR for a major application for an onshore wind project within a sensitive salmonid watershed. Responsible for fieldwork, establishing hydrological constraints, preparation of the EIAR chapter, and coordination of underpinning WQMP, Water Framework Directive Assessment, Surface Water Management Plan, and Flood Risk Assessment.

Water Environment Assessment – Shronowen Wind Farm, Co. Kerry (ongoing)

Responsible for undertaking baseline environmental assessments to underpin an EIAR for a major application for an onshore wind project within a sensitive salmonid watershed. Responsible for fieldwork, establishing hydrological constraints, preparation of the EIAR chapter, and coordination of underpinning WQMP, Water Framework Directive Assessment, Surface Water Management Plan, and Flood Risk Assessment.

Water Environment Assessment – Altnagapple Wind Farm, Co. Donegal (ongoing)

Responsible for undertaking baseline environmental assessments to underpin an EIAR for a pending major application for an onshore wind project. Responsible for fieldwork, establishing hydrological constraints, preparation of the EIAR chapter, and coordination of underpinning WQMP, Water Framework Directive Assessment, Surface Water Management Plan, and Flood Risk Assessment.

Water Environment Assessment – Mullaghclogher Wind Farm, Co. Tyrone (ongoing)

Project manager responsible for undertaking baseline environmental assessments to underpin an EIAR for a pending application for an onshore wind project. Responsible for fieldwork, establishing hydrological constraints, preparation of the EIAR chapter, and coordination of underpinning Surface Water Management Plan and Flood Risk Assessment.

Selected Relevant Projects (contd.)**Hydrological Constraints Assessment – Corvoderry Wind Farm, Co. Mayo (2024)**

Responsible for undertaking baseline environmental assessment including desk-based assessment and fieldwork to inform iterative design process of proposed wind farm. Responsible for water features survey / mapping, catchment analysis and establishing hydrological constraints.

Hydrological Constraints Assessment – Tawnatruffaun Wind Farm, Co. Sligo (2024)

Responsible for undertaking baseline environmental assessment including desk-based assessment and fieldwork to inform iterative design process of proposed wind farm. Responsible for water features survey / mapping, catchment analysis and establishing hydrological constraints.

Hydrological Constraints Assessment – Evishagaran Wind Farm Extension, Co. Derry / Londonderry (2024)

Responsible for undertaking baseline environmental assessment including desk-based assessment and fieldwork to inform iterative design process of proposed wind farm. Responsible for water features survey / mapping, catchment analysis and establishing hydrological constraints.

Water Environment Assessment – Consented Crookedwood Solar Farm, Co. Westmeath (2023)

Responsible for undertaking baseline environmental assessments to underpin a water environment assessment for a pending application for an onshore solar project. Responsible for fieldwork, establishing hydrological constraints, preparation of the environmental assessment for inclusion in the application Planning Report, and coordination of underpinning Surface Water Management Plan and Flood Risk Assessment.

Water Environment Assessment – Curraghmulkin Wind Farm, Co. Tyrone (2023)

Responsible for undertaking baseline environmental assessments to underpin an EIAR for a major application for an onshore wind project within a sensitive salmonid watershed. Responsible for fieldwork, establishing hydrological constraints, preparation of the EIAR chapter, and coordination of underpinning WQMP, Water Framework Directive Assessment, Surface Water Management Plan, and Flood Risk Assessment.

EIA Review & Water Quality Monitoring – Consented Yellow River Wind Farm, Co. Offaly (2021 – Present)

Responsible for undertaking a comprehensive review of previous environmental assessments, planning application history / conditions (environmental obligations), and permits / licences at, and in the vicinity of, a consented wind farm development. Responsible for the collation of data and preparation of report to inform due diligence measures. Currently managing construction phase monitoring.

Water Environment Assessment – Proposed Carnbuck Wind Farm, Co. Antrim (2022)

Responsible for undertaking baseline environmental assessments to underpin an EIAR for a pending major application for an onshore wind project within a sensitive salmonid watershed. Responsible for fieldwork, establishing hydrological constraints, preparation of the EIAR chapter, and coordination of underpinning WQMP, Water Framework Directive Assessment, Surface Water Management Plan, and Flood Risk Assessment.

Water Quality Assessment Report – Cam Burn Wind Farm, Co. Derry / Londonderry (2022)

Responsible for managing the water quality sampling during the construction-phase of a consented wind farm. Responsible for collating water quality data and reviewing against legislative limits for specified chemical parameters. Prepared monthly water quality assessment reports for submission to client.

Water Environment Assessment – Pigeon Top Wind Farm, Co Tyrone (2021)

Responsible for undertaking baseline environmental assessments to underpin an EIAR for a proposed amendment / extension application for a proposed wind farm. Responsible for fieldwork, establishing hydrological constraints, preparation of the EIAR chapter, and coordination of underpinning WQMP, Water Framework Directive Assessment, Surface Water Management Plan, and Flood Risk Assessment.



Background

Kyle is a Director with McCloy Consulting Ltd and is a Chartered Engineer with over 19 years experience in environmental engineering specialising in flood risk, hydrology and water quality management, with particular experience in the renewable energy sector.

Experience and Expertise

Kyle has been responsible for the project management and technical leadership of complex technical environmental and engineering schemes with fee value in excess of £100k as well as having extensive experience of the preparation of various environmental and engineering and technical performance, feasibility, and appraisal reports.

He has been responsible for the management and technical oversight for geo-environmental (contamination and groundwater), environmental hydrology, eco-hydrology and flood hydrology projects undertaken by the practice in the UK and Ireland. Kyle offers added value with his knowledge and experience of renewable energy projects from inception through to construction supervision, as well as a substantial portfolio of work on planning and environmental assessment processes, ensuring that outcomes are suitable for scrutiny as part of public / planning consultation and higher reviews.

Current Position

Director

Qualifications

Chartered Engineer
 BEng (Hons) Civil Engineering 2004
 Queens University of Belfast

Professional Memberships

Chartered Member of Engineers Ireland (CEng MIEI)

Employment History

2009-Present
 McCloy Consulting Ltd., Belfast

2008-2009
 Fehily Timoney & Co., Dublin

2006-2008
 Nicholas O'Dwyer Ltd., Newry

2004-2006
 Ferguson McIlveen LLP, Belfast

Health and Safety

- Trained as Project Supervisor – Design Process (PSDS) - 2018
- Construction Skills Register – Site Pass

Selected Relevant Projects

Cummeenabuddoge Wind Farm, Co. Kerry (2024)

Project director and technical lead for a technically challenging pending wind farm application on lands which were previously refused on grounds of effects on water quality downstream. Directed a novel approach including dispersion modelling of reduced quality runoff from the site to allow assessment of effects to and SAC downstream, to allow increased confidence to regulators. Directed EIA chapters and site specific FRA.

Tuam Energy Park, Co. Galway (2021)

Project director and technical lead for hydrology, geology, groundwater and flood risk assessments for a large-scale solar PV application. Prepared a detailed site specific flood risk assessment, prepared a detailed surface water management plan, and directed an environmental screening assessment and cross coordination with the CEMP. Post-consent managed Section 50 authorisations.

Yellow River Wind Farm, Co. Offaly (2021)

Project director leading a review of the EIA hydrology assessments submitted in support of a consented wind farm in order to inform due diligence measures and identify changes affecting the applicants liability. Directed a comprehensive baseline surface water monitoring study and currently engaged in construction phase monitoring. Directed culvert sizing and Section 50 consent assessments.

Timahoe North Solar Project, Co. Kildare (2022)

Undertook a review of EIA / FRA commitments with a view to rationalising planning-stage drainage proposals for purposes of a construction tender specification. Advised the client in relation to FRA justification test compliance. Technical lead for temporary drainage design for an enabling works contract.

Unshinagh Wind Farm, Co. Antrim (2021)

Project director for EIA Soils and Water chapter for a 59MW proposed wind farm. Directed the EIA chapter and environmental assessment, baseline water quality assessment, and was technical lead for a detailed site specific flood risk assessment including flood modelling. Undertook a surface water management plan.



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Selected Relevant Projects (contd.)**Carnbuck Wind Farm, Co. Antrim (2021)**

Project director for EIAR Soils and Water chapter for a 50MW proposed wind farm. Directed the EIAR chapter and environmental assessment, baseline water quality assessment, and was technical lead for a detailed site specific flood risk assessment including flood modelling. Undertook a surface water management plan and watercourse crossing schedule.

Pigeon Top Wind Farm, Co Tyrone (2021)

Project director for EIAR Soils and Water chapter for a proposed amendment / extension application for a proposed wind farm. Directed the EIAR chapter and environmental assessment, baseline water quality assessment, and undertook a surface water management plan and watercourse crossing schedule.

Ballykeel Wind Farm, Co. Antrim (2021)

Project director and technical lead preparing a surface water management plan and detailed Construction Environmental Management Plan to discharge planning conditions for a wind farm that McCloy had previously provided planning support to. Obtained relevant statutory consents for discharges and works to watercourses and advised the client in relation to non-material changes for planning due-diligence.

Smulgedon Wind Farm, Co. Derry (2022)

Project directed and technical lead to provide a Drainage Assessment and Surface Water Management Plan for an application to vary an existing permission for a 16MW wind farm. Obtained relevant statutory consents for discharges and works to watercourses. Advised the client and legal counsel in relation to ancillary development and permissibility / comparison of drainage requirements for the consented vs proposed development in order to inform planning strategy.

Site Specific Flood Risk Assessments in Ireland, Various

Technical lead directing SSFRAs of various complexity across Ireland and Northern Ireland, with projects ranging from industrial masterplans to strategic housing developments. In-depth knowledge of hydraulic modelling approaches and likely local authority requirements for SSFRA which vary county to county.

Long Mountain Wind Farm Hydrogen Production Facility, Rasharkin Co. Antrim (2020)

Project manager for development of a battery storage facility, with works undertaken comprising a hydrological assessment to determine sensitivities of receiving waterways, preparation of a Construction Environmental Management Plan, preparation of a drainage strategy, and undertaking a preliminary-through-detailed groundwater supply feasibility investigation leading to direction of a drilling and pump test to establish a permanent water supply for hydrogen production.

Evishagarran Wind Farm, Dungiven Co. Derry, 2017

Responsible for management and oversight for a hydrological assessment for a wind farm site adjacent to a salmonid SAC / ASSI, including detailed flood risk assessment, hydrological mapping and coordination with fisheries and ecological assessments to identify eco-hydrological impacts. Responsible alongside the project Ecologist for identification, mapping, and assessment of the effect of the proposal on units of degraded blanket bog. Responsible for strategy to identify areas of adjacent degraded drained bog for survey and establish a strategy for bog restoration through ditch blocking.

Renewable Energy Development, Glenarm, 2016

Provided detailed hydrological and hydrogeological input to a Habitat Enhancement Plan prepared by the project Ecologist, to comprise an Eco-Hydrology assessment of areas of flushes and margin mires. Assessed water dependency using the WETMECs approach. Provided advice to the developer on measures to minimise impacts on existing habitat hydrology, and developed in conjunction with the ecologist measures to target GWDTE habitat enhancement through targeted land raising and ditch blocking.

Strategic Hydrological Assessment, Cappaghfinn – Fingal Co. Council – 2019

Project Manager and Technical lead for the flood risk assessment and flood study aspects of an Surface Water Management Plan, comprising Strategic Flood Risk Assessment and Sustainable Drainage Strategy to inform a Local Area Plan. Designed a suitable surface water (distributed hydrology) fed model. Directed the SFRA report and advised on suitable strategies to be incorporated in the latter drainage strategy to mitigate surface water flood risk.

Strategic Flood Risk Assessment, Kellystown, Fingal Co. Council - 2020

Project Manager and Technical lead for the flood risk assessment and flood study aspects of an Surface Water Management Plan, comprising Strategic Flood Risk Assessment and Sustainable Drainage Strategy to inform a Local Area Plan. Designed a suitable surface water (distributed hydrology) fed model including local drains and watercourses. Directed the SFRA report and advised on suitable strategies to be incorporated in the latter drainage strategy to mitigate surface water flood risk.



CURRICULUM VITAE

MARK SALISBURY

ASSOCIATE DIRECTOR - LANDSCAPE ARCHITECT
BA (HONS), DIPLA LANDSCAPE ARCHITECTURE
CMLI (2013)

PERSONAL PROFILE

Mark moved to the UK from Guernsey in the Channel Islands for University, following which he based himself in Yorkshire. In 2017, after several years working within multi-disciplinary environmental and planning consultancies, Mark relocated to Northern Ireland where he worked for The Paul Hogarth Company before joining Macro Works in 2023. Over the course of his professional career, Mark has gained extensive LVIA/TVIA experience across the UK and Ireland, in a variety of development contexts including major infrastructure projects, residential developments, tall buildings, wind and solar energy developments, industrial and commercial developments, Whisky distilleries, and a variety of different mineral extraction sites. Many of these projects were carried out in or near landscapes / townscape with designated sensitivities, including Conservation Areas, World Heritage Sites, Areas of Outstanding Natural Beauty and National Parks, where place specific design and mitigation responses were required.

EDUCATIONAL AND PROFESSIONAL STATUS

- BA Landscape Architecture and Town Planning, University of Sheffield 2005
- Diploma Landscape Architecture, University of Sheffield 2007
- CMLI, Chartered Member of the Landscape Institute, 2013

EMPLOYMENT HISTORY

- 2023 + Associate Director Landscape Architect Macro Works
- 2020 + Associate Landscape Architect The Paul Hogarth Company
- 2017 Senior Landscape Architect The Paul Hogarth Company
- 2014 - 2017 Senior Landscape Architect Pegasus Group
- 2008 - 2014 Landscape Architect Scott Wilson / URS
- 2005 - 2006 Graduate Landscape Architect WYG

SELECTED RECENT PROJECT EXAMPLES

10+ Wind Energy Projects. Feasibility, Design Optimisation and LVIA, with experience gained in Ireland and the UK (including projects in Scotland, England, Wales, and Northern Ireland).

10+ Solar Energy Projects. Feasibility, LVIA, Glint and Glare Assessments, with experience gained in Ireland and the UK (including projects in Scotland, England, Wales, and Northern Ireland).

6+ Whisky Distillery projects. Feasibility, Design Optimisation and LVIA, with experience gained in Scotland, designated qualities of the Dornoch Firth National Scenic Area.

Characterisation studies. Preparation of Natural England Urban and Rural character profiles, as well as a Pilot Seascape Character Assessment for two areas of territorial waters along the eastern and southern coastline.

Reservoir Design Guidance. Preparation of landscape led design guidance for new landscape scale reservoir projects, and the reconfiguration of existing reservoirs.



GEMMA CLARK

Head of Noise & Shadow Flicker/ Principal Consultant

Discipline: Noise assessment

Key Qualifications: MSc Clean Technology, BSc Environmental Science (Hons)

Professional Memberships: MIOA, PIEMA

Experience: 19 years

INTRODUCTION

Gemma is a Principal Consultant with over nineteen years' experience working in the environmental consultancy sector on a wide range of noise assessments for wind farms, mineral sites, housing developments and industrial developments.

Since joining TNEI in 2007, Gemma has developed a detailed knowledge of wind farm noise assessments.

KEY EXPERIENCE

- ETSU-R-97 Noise Assessments
- WEDG Noise Assessments
- BS4142 Industrial Noise Assessments
- BS5228 Construction Noise Assessments – wind farms & solar farms
- Wind Farm Noise Compliance Monitoring and Assessment
- Noise Propagation Modelling
- Wind Farm Layout Design and Turbine Selection
- GIS Constraints Mapping (ArcMap)
- Support in relation to Planning Appeals including Public Inquiries
- Shadow Flicker Assessments

EDUCATION AND PROFESSIONAL STATUS

- BSc (Hons) Environmental Science, University of Limerick (2001)
- MSc Clean Technology, University of Newcastle upon Tyne (2002)
- NEBOSH National General Certificate in Occupational Health and Safety (Distinction) (2006)
- Certificate of Competence in Environmental Noise Measurement (2007)
- Practitioner Member of the Institute of Environmental Management and Assessment (IEMA)
- Member of the Institute of Acoustics (IOA)

EXPERIENCE RECORD

TNEI Services Ltd

2007 – present

Head of Department/ Principal Consultant

Onshore Renewables

Gemma is an experienced project manager who has worked on a large number of wind energy development projects from initial feasibility work on the sites, through to baseline assessment,

impact assessment (drafting of Technical Reports and Chapters) and post submission support and compliance monitoring including complaints investigations. Gemma has also undertaken reviews of a number of noise reports produced by other noise consultants and assisted in the preparation of noise evidence for a number of Public Inquiries.

Project highlights:

- Scotland - Multiple wind farm sites of varying capacity including numerous Section 36 sites (project examples include Viking, Kype Muir and Extension, Beaw Field, Mossy Hill, Garvary).
- Wales - Multiple wind farm sites of varying capacity including Developments of National Significance (project examples include Alwen).
- Ireland - Multiple wind farm sites of varying capacity (project examples include Umma More and Seskin).
- Energy Consents Unit / Local Planning Authorities – Undertaking reviews of third party noise assessments relating to proposed onshore wind farms and providing guidance to the consenting authority.
- Undertaken site finding and detailed constraints mapping using ArcMap on a number of proposed wind development sites. The constraints maps were used to feed into wind farm layouts and site designs.



JIM SINGLETON
Specialist Consultant

Discipline: Acoustics

Key Qualifications: BSc (Hons) Music Technology, Diploma in Acoustics & Noise Control (IOA)

Professional Memberships: MIOA, AES

Experience: 17 years (consultancy), 7 years (lecturing)

RECEIVED: 04/12/2024
Viewing Purposes Only

INTRODUCTION

Jim is a Specialist Consultant whose experience within acoustics consultancy covers a range of sectors including environmental noise, occupational noise and architectural acoustics but with particular expertise in energy generation, storage and infrastructure projects.

KEY EXPERIENCE

- Due diligence
- Expert Witness and Appeal Hearings
- Independent Technical Expert (ITE) for the Capacity Market
- Noise propagation modelling
- Noise assessments, compliance monitoring and noise management
- Construction, quarrying and blast monitoring (noise & vibration)
- Transportation noise & vibration (road, rail, marine & aircraft)
- ETSU-R-97 Noise assessments
- Shadow Flicker assessments for planning, complaints investigations and SF control.
- IPPC Permitting
- Independent Technical Expert (ITE) for the Capacity Market

EDUCATION AND PROFESSIONAL STATUS

- Diploma in Acoustics & Noise Control, Institute of Acoustics (2008)
- BSc. (Hons) Music Technology, First Class (2001)
- Member of the Institute of Acoustics (MIOA)
- Member of the Audio Engineering Society (AES)

SELECTED INTERNATIONAL EXPERIENCE

- Umm Qasr Depp Water Port, Iraq
- NEOM Ath Thuqaba, Saudi Arabia
- Battery Energy Storage System (BESS) Operational Noise Assessment, Germany
- Design of Construction Noise Monitoring Survey and Protocol, Haiti
- Specification of Noise Testing Protocol for BESS equipment, China

Jim is a full Member of the Institute of Acoustics with 17 years consultancy experience.

EXPERIENCE RECORD

TNEI Services Ltd
August 2014 – present

Specialist Consultant

ENERGY PROJECTS

Jim primarily works on energy projects covering a range of renewable energy generation, storage and electrical infrastructure. Some projects of note include:

Generation & storage

- BESS: Jim has worked on a large number of battery storage schemes up to 750+ MW
- Capacity Market Schemes, numerous (1 MW – 40+ MW)
- Solar Farms (centralised, decentralised and hybrid layouts)
- Co-location projects e.g., Solar Farm & BESS
- Energy from Waste plants (EIA and PPC applications)
- Due Diligence, including a 7GW+ solar portfolio and wind farms (UK and abroad)

Infrastructure

- Triton Knoll Offshore Windfarm (OWF) landfall (prediction and monitoring of HDD activities)
- NorthConnect (Norway / Scotland Interconnector)
- Galloper 336 MW OWF onshore substation
- Alwen Forest Overhead Line optioneering studies
- Aberdeen OWF landfall (predictions & measurements for cable winching) and operation (noise control for substation operations)
- New Gorbals District Heating Scheme
- Seagreen II (Berwick Bank) OWF substation noise studies (HVAC & HVDC modelling)
- Hydrogen refuelling stations and electrolyser projects
- Numerous synchronous condensers (planning applications & operational noise monitoring)

MARINE, NEAR-SHORE AND PORTS

Jim has worked both locally and internationally on marine, near shore and port projects and provided a wide range of consultancy services to this sector. Examples include;

- Umm Qasr, Iraq (ESIA studies and chapter for extension of container port and RORO services)
- Johan Castberg FPSO Module (operational noise predictions for floating production storage and offloading vessel)
- Port of Cromarty Firth, Invergordon (PPC application for oil & gas decommissioning and offshore asset recovery)
- Lochmaddy/Tarbert (Harbour expansions to facilitate larger ferry on Isle of Harris and North Uist.
- Ullapool land reclamation and harbour development – Noise and vibration studies

Kate Robb BA MA PGDip. EIA/SEA Mgmt. MIAI

Senior Archaeologist & EIA Consultant

Ms Robb is a qualified archaeologist and an EIA heritage consultant, with over 15 years' industry experience and has been involved in the preparation and production of Cultural Heritage EIAR for a wide range of large-scale projects (including renewable projects), for both public and private developments.

Kate's professional interests in recent years has focused on community cultural heritage projects that require working with the general public in order to develop novel and innovative solutions to preserving, conserving and show-casing cultural heritage assets. The effects of climate change on archaeological monuments and developing best practice methods around this and World Heritage Conservation and Management holds particular research interest for Kate, as well as various thematic study elements of prehistoric Irish archaeology, in particular that related to megalithic tombs, stone monuments and archaeoastronomy.

Professional Qualifications/Skillsets

- Bachelor of Arts (Hons.), Archaeology & English, National University of Ireland, Galway, 1999
- Master of Arts (Hons.), Archaeology, National University of Ireland, Galway, 2001
- Diploma EIA/SEA Management, University College Dublin, 2005
- MSc World Heritage Conservation, University College Dublin (2024-2027) – currently enrolled study, qualifications pending
- Full Member of Institute of Archaeologists of Ireland (IAI)
- Member of Engagement & Outreach Working Group for the delivery of strategic aims and objectives of *Archaeology 2030* (NI)
- Grants Assessor the Heritage Council (2024-2027)

Areas of Expertise

- Archaeological & Architectural Heritage field surveyor
- Cultural Heritage impact assessor and EIAR competent authorship for both development and non-development led projects
- Proficient in GIS project mapping use: metadata provision and map-based assessment
- Cultural Heritage consultant/Client representative for statutory and non-statutory bodies, & Design Teams
- Community Archaeology/Cultural Heritage project management and outreach

Relevant Experience

Kate is a fully qualified archaeologist and EIA/SEA consultant and has both project-managed and conducted the cultural heritage environmental assessment of numerous large-scale infrastructural schemes. Sample project experience in recent **wind energy projects** include, Barnesmore Repowering Wind Farm, County Donegal, Firlough Wind Farm, County Mayo, Glencastle Wind Farm, County Mayo, Tirawley Wind Farm, County Mayo, Firlough Windfarm and Green Hydrogen Plant, Co Mayo, Tullynamoyle Wind Farm, County Leitrim, Clooncunny Wind Farm, County Sligo and Cronalaght Wind Farm, County Donegal.

Kate has considerable experience of road-based linear infrastructural schemes and is currently acting as the lead Cultural Heritage consultant for the **Trans-European Transport Network (TEN-T) Donegal** Project Team (a major project consisting of three National Primary Roads N13, N14 and part of the N15). TEN-T Donegal Phase 2 (Constraints Study and Options Assessment) is complete and Phase 3 EIAR assessment of the preferred option is currently nearing completion. Kate has recently completed the delivery of Cultural Heritage options assessment for TII project **N17 Knock-Collooney [Atlantic Economic Corridor] Road Upgrade** (Phase 2), and Phase 1 of **N16 Munakill Realignment, Co. Leitrim** (all Phases). She is currently working on the **N3 Virginia Bypass, Co. Cavan** (all Phases).

In addition, Kate completed a Heritage Impact Assessment (ICOMOS) for a water pipeline replacement scheme within the confines of UNESCO World Heritage Site *Brú na Bróinne* as well as input to an EIA (Cultural Heritage) evaluation on behalf of Tipperary County Council (Competent Authority), regarding planning application for a proposed wind farm extension and related works at Upperchurch, Co. Tipperary.

Kate has project managed a diverse and numerous range of schemes for JCA across Ireland and Northern Ireland including:

- Feasibility, baseline studies and EIA of various service-based projects such as wind farms, waste-water treatment plants, waste facilities and development-led projects such as quarries, golf courses and residential developments.

She has also had direct input to several architectural heritage impact assessment and architectural heritage building appraisals as well as Conservation Plans and Environmental Impact Assessments of some of the major country houses/demesne lands in Ireland – Blarney Castle, Dunkettle House & Carrigglas House – on behalf of various private developers.

Kate undertook the project management, team co-ordination for surveying and liaison of the extensive **National Inventory of Architectural Heritage (NIAH)** South Donegal, Inishowen, Letterkenny & Rathmelton; and Monaghan (Urban) survey programmes and reporting outputs for publication. Recent NIAH surveying inputs were provided by Kate as part of the JCA team on a recent Audit of NIAH Structures in Inishowen, Co. Donegal (2023).

In addition to development-led projects, Kate has acted as **Community Archaeologist** for Donegal County Council (2022 - present). She has also delivered the development of innovative (farmer-led) actions for protection of the archaeological resource and enhancement of the cultural heritage landscape at Rathcroghan, Co. Roscommon. This was undertaken as part of Years 1 – Year 5 Community Archaeologist consultancy services of the **Farming Rathcroghan EIP Project** (2019-2024) and Kate has commenced repeat services for 2024 concerning 'Monumental Royal Rathcroghan' farming family and youth outreach services and production of a best practice booklet for farming and care of earthen monuments (forth-coming, Q4 2024).

Chetana Ramanna

Senior Geotechnical Engineer

CAREER SUMMARY

I am a chartered civil engineer and hold a master's degree in civil engineering and a PhD in Probabilistic Seismic Hazard Analysis. I have a wide range of experience in many fields including Information Technology in India, USA and Japan. I have also lectured in IT Carlow in Ireland in the Built Environment Department.

Prior to joining the mining division of WSP, I worked as a geotechnical engineer for road infrastructure projects for RPS Consultants. This included preparing statement of intent, preliminary source study report, specification and BOQ, scheduling lab tests from preliminary logs, geotechnical interpretative report and geotechnical design reports for projects. On the design front, I have prepared geotechnical design forms and geotechnical design reports for reinforced earth structures, bridges and culverts. I have carried out design of soil nails, reinforced soil slopes and earth retaining wall, design of sub-base for pavements, design of geogrid and determination of stages (thickness and number) for embankments on soft ground using stability analysis. I carried out stability analysis of cuts and embankments, and settlement analysis for embankments. I have also experience in design of temporary works for trench support such as sheet pile sections, embedment, and arrangement of props.

At WSP, I reviewed site-specific seismic hazard assessment report for the area where the mining facility is located. I have been involved in the vibration monitoring and design of maximum instantaneous charge for quarry blasting. I have also carried out a desk top study to assess the blast effect of a quarry on the nearby wind turbine generator foundations. Was part of the team where temporary platforms was designed for transportation of wind turbine blades. I am currently involved in diverse geotechnical activities such as analysing geotechnical monitoring instrumentation data for tailing storage facility, reinforced retaining wall design checks for a housing estate, geotechnical desk study for pedestrian and cycle path for towns, and embankment stability checks for tailing storage facility – static and pseudo static conditions. Was involved in liquefaction assessment of tailing storage facility post closure. I carried out cone penetration test processing and interpretation for determining the soil type, state parameters, cyclic resistance ratio, static and liquefied undrained shear strength using the principles of critical state soil mechanics.



1 year 9 months with WSP

Area of expertise

Seismic Hazard Estimation
Geotechnical Engineering for Road Infrastructure
Ground Vibration for Quarry Blasts
Critical State Soil Mechanics for Tailing Storage Facility
Probability and Statistics
Fuzzy Set theory and Image Classification
Information Technology – software programming skills

Total 13 years of experience with 6 years in Geotechnical field

Languages

English
Kannada
Hindi
Tamil

Chetana Ramanna

Senior Geotechnical Engineer

EDUCATION

Master's Degree in Civil Engineering (MEng), Indian Institute of Technology Roorkee, 2001

Doctor of Philosophy in Civil Engineering, Indian Institute of Technology Madras, 2012

PROFESSIONAL MEMBERSHIPS

Chartered Engineer (CEng), Engineers Ireland, 2021

Life Member of Indian Geotechnical Society, 2007

PROFESSIONAL HISTORY

2022	WSP, Ireland
2019 – 2022	RPS Group, Ireland
2016 – 2017	IT Carlow, Ireland
2007 – 2012	Research Scholar, IIT Madras
2001 – 2007	Tata Consultancy Services

PROFESSIONAL EXPERIENCE

Coka Rakita, Dundee Precious Metals Inc, Serbia

2024, WSP

The earthquake loading to be considered for various facilities for the mine waste facility proposed at Coka Rakita for gold mine was calculated. Previous seismic analysis report was reviewed for the current seismic scenario considering recent earthquakes in the region. Ground motion parameter in terms of peak ground acceleration for various site condition and as per different standards (GISTM, Code of Mines and ANCOLD) were determined for the mining facility.

Vattenfall, Raylees Wind Farm, Northumberland, UK

2023, WSP

Conducted desktop study to determine the blasting ground vibration effect on the proposed wind turbine generators located in close proximity to the quarry.

EDF Renewables Ltd, County Louth, Ireland

2023-2024, WSP

Assess the ground vibration in terms of PPV and frequency on the proposed wind turbine generators due to the blasting carried out in nearby quarry. The assessment was carried out based on the GSI maps and vibration monitoring data available in the vicinity of the quarry. A detailed study was proposed to provide the client the exact PPV and frequency each wind turbine will be subjected to at the foundation level. Monitoring

Chetana Ramanna

Senior Geotechnical Engineer

stations were set up at turbine locations and site-specific attenuation model was developed to arrive at the ground vibration and air overpressure contours and safe zones for the turbine site.

Aughinish Alumina Limited, County Limerick, Ireland

2023 – 2024, WSP

Review the blast plans prepared for each blast by Exsol Ltd. and provided guidance for the maximum instantaneous charge (MIC) for the blasts conducted in the borrow pit within close proximity to the bauxite residue disposal area. This was achieved by measuring the vibrations and updating the site law parameters for the site which were subsequently used for designing the MIC for the next blast.

Dundalk Active Travel Projects, County Louth, Ireland

2023-2024, WSP

Carry out desktop study to provide a summary of potential geotechnical constraints including the site's environmental setting and history, which may need to be considered for future development of seven of the routes within the Dundalk town for cycle lane and footpaths. Provide ground investigation specifications and BOQ for field and laboratory works.

ABO Wind NI Ltd, County Derry, Northern Ireland

2023, WSP

Provide design details for the platform/easement that will support the movement of the delivery vehicles for the windfarm envisaged to be constructed to the north of Blackwater Bridge near Magherafelt. This platform was intended to support the vehicles carrying the components of the Vesta 117 Wind turbines. The task consisted for interpreting the site investigation report, alignment design, earthworks design and drainage requirements.

Castletreasure Residential Development, Cairn Homes, County Cork, Ireland

2023, WSP

Design and construction validation of greenwall retaining structure at Castletreasure residential development located in Douglas. The design checks consisted of interpreting the field and lab tests to derive characteristics soil parameters, developing ground model and carrying out internal and external stability checks as per BS 8006-1 and EN 1997-1:2005. Spreadsheets for external stability checks were developed while internal checks were carried out using GeoStudio software.

Western Range, Arcelor Mittal Ltd, Liberia

2023, WSP

Geotechnical reports such as factual report, interpretative report, borrow area assessment report etc for the new mining facility in construction in Liberia.

Tietto Minerals, Abuja Gold Project, Côte D'Ivoire

2022, WSP

Chetana Ramanna

Senior Geotechnical Engineer

Review of site-specific probabilistic hazard assessment report for the project site which was prepared by Knight Piesold Consulting.

Dundee Precious Metals, Ada Tepe Gold Project, Bulgaria

2022 - 2024, WSP

Compilation of data from the geotechnical monitoring instruments for tailing storage facility.

Ikkari Pre-Feasibility Study, Finland

2023 – 2024, WSP

Stability assessment of the tailing storage facility for the Ikkari gold mines in Finland. The stability assessment is part of the pre-feasibility study to determine the optimum thickness of tailing and waste rock. GeoStudio software was used in carrying out the static and pseudo static analyses. The appropriate horizontal seismic coefficient for the region was determined from the Earthquake Facilities for Earthquake Hazard and Risk (EFEHR) website.

Simandou Iron Ore Project, Guinea, West Africa

2023, WSP

Stability analyses of the earthworks for LME9 local haul road which was approximately 3.12 km long with cuts slopes up to 70 m high. The stability checks were carried out as per EC7 design approach 1, combination 2 using GeoStudio software.

Car Park for Cork BusConnects Scheme, County Cork, Ireland

2023, WSP

Preparation of preliminary sources study report comprising of desk study to document the geotechnical and other investigation implications for the feasibility of the study area for a potential car park as part of the wider Cork BusConnects Scheme.

Liquefaction Potential Assessment, Whinnyhall BRSF, Scotland

2023, WSP

Liquefaction potential of the bauxite residue storage facility based on the soil parameters compiled from previous studies and data from cone penetration testing with pore pressure measurements (CPTu). Both the static and seismic liquefaction susceptibility of the bauxite residue were assessed.

Tara Mines, Ireland

2022, WSP

Compilation of data from the geotechnical monitoring instruments for tailing storage facility.

Hampden Fields A41 Woodlands Roundabout, Taylor Wimpey

Chetana Ramanna

Senior Geotechnical Engineer

2022, RPS

The existing A41 simple three arm roundabout is replaced with a hamburger roundabout on the outskirts of Aylesbury. Was involved in the geotechnical aspect of the project and prepared ground investigation scoping document for the ground investigation along with the bill of quantity for the scheme.

Broadmeadow Way Greenway, Fingal County Council

2021, RPS

The scheme comprises the development of approximately 6km of new greenway between Malahide Demesne and Newbridge Demesne which includes utilising and upgrading of existing roads and paths, newbuild sections across greenfield sites and the crossing of Malahide Estuary. Was involved in the preparation of work requirements specification document for additional ground investigation points and geophysical survey lines along the estuary embankment. Carried out analysis of stress bulbs for various greenway platform options proposed across the estuary. Was involved in scheduling of laboratory tests based on preliminary logs.

Monaghan Town Regeneration Scheme Phase 1 (South Dublin Street and Backlands), Monaghan County Council

2021, RPS

Worked on the preparation of preliminary sources study report based on previous ground investigation reports, hydrogeological assessment reports, flood risk assessment report, and GSI and Geohive maps. Preparation of work requirements specification document for ground investigation.

TEN-T Priority Route Improvement, Donegal, Donegal County Council

2021, RPS

Was responsible for the determination of geogrid requirement, number of stages and their thickness for staged construction of embankment using stability analysis.

N54 Tullybryan Realignment, Monaghan County Council

2021, RPS

Was involved in the geotechnical aspect of the detailed design. The work involved updation of geotechnical interpretative report, earthwork design such as capping and sub-base thickness determination from various tests.

Lehenaghmore Road Improvement Scheme, Cork City Council

2021, RPS

Was involved in the geotechnical aspects of the project such as preparing ground investigation scoping document and bill of quantity for the scheme.

HS2 Haul road, HS2 Ltd,

Chetana Ramanna

Senior Geotechnical Engineer

2021, RPS

Carried out study of ground investigation logs and using correlations to determine the equilibrium CBRs for determining the depth of capping and sub-base required for temporary roads. Also prepared scoping document for additional ground investigation points required for gaps in the existing ground investigation points.

Coffey Temporary Work Trench Design, Coffey Group

2021, RPS

Worked on the production a series of Standardised Trench Support Design (STSD) for trenches and/or shafts up to 7m deep and 2m wide in typical Irish soils and situations. Each standardised design would include a limiting soil and groundwater profile for which it would be suitable. Carried out design of trench support such as sheet pile section needed, embedment needed, arrangement of props or ring supports, typical construction details and layout, monitoring and inspection requirement, design ground conditions envelope and checklist for verification. FREW software was used for the design of the support system of the trenches.

M6, Slips and Yarnfield Lane, Yarnfield Site 1, HS2 Ltd

2021, RPS

Was involved the preparation of Statement of Intent and Preliminary Source Study Reports for the project.

Ballebeg Bat House Design, Twin Oaks, HS2 Ltd, Fusion

2021, RPS

Worked in the preparation of ground condition assessment report, scoping of the ground investigation and scheduling the laboratory tests from the preliminary logs.

N2 Slane Bypass and Slane Village Public Realm Enhancement (PRE) Project, Meath County Council, 2021, RPS

Was involved in the preparation of geotechnical design reports for preliminary design of cycle cum pedestrian bridge and Boyne river bridge. Conducted study for the Slane village PRE using flood maps, GSI maps and EPA maps. Preparation of preliminary source study report for the project.

N55 Corduff to South Killydoon, Cavan County Council

2020 – 2021, RPS

Was involved in the preparation of geotechnical design forms for river bridges, retaining wall and a noise barrier.

A77 Maybole Bypass, Wills Bros Civil Engineering Ltd.

2019 – 2020, RPS

Worked as a project engineer preparing geotechnical design reports for structures, carried out slope and settlement analyses using Slope/W and Sigma/W and carried out rock cut stability analyses using Dips and

Chetana Ramanna

Senior Geotechnical Engineer

Swedge software packages. Assisted in preparation of geotechnical investigation report by analysing field and laboratory test results of soils and rocks using HoleBase Excel Extension and HoleBase Template Studio by Keynetix.

N5 Westport to Turlough Design Build, Wills BAM JV (WBJV)

2019, RPS

This project involved the tender stage design of a proposed new road from east of Castlebar to Westport in County Mayo. The bulk of the ca.25km route is designed as a Type 2 Dual Carriageway. Worked on preparation of reusability excel worksheet using Visual Basic that consolidated all the soil field and lab test. These consolidated tests were further subjected to acceptability criteria for reuse in the project as fill material. The whole process was automated using visual basic programming.

N59 Moycullen Bypass, Co Galway, Galway County Council

2019, RPS

Key elements of the scheme include two at-grade roundabouts on the N59, eight bridge structures (road, river, canal and underpasses), 3.5km of local road improvements/realignments and 1.7km farm/accommodation roads. Was involved in the compilation and preparation of geotechnical investigation report for the bypass passing through challenging ground with deep peat and Karst region.

N5 Westport to Turlough Design Build, Wills BAM JV (WBJV)

2019, RPS

RPS is the Contractor's Designer for the c. 19.7km dual carriageway, 2.1km of single carriageway bypassing the town of Castlebar and 2.4k of single carriageway along the N59. The scheme includes two compact grade separated junctions including overbridges, six ICD roundabouts, 59 at grade priority junctions, and 27 structures (2 rail bridges, 11 overbridges, 3 underbridges and 11 underpasses) and associated earthworks, drainage, landscaping, realignment of existing roads, accommodation tracks, diversion of services and ancillary works.

Was involved in the preparation of report templates for plotting soil tests, preparation of geotechnical design report for structures (culverts and bridges) and earthwork sections. Compilation of geotechnical test results for geotechnical investigation report for the entire scheme. Slope stability and settlement analysis for critical earthwork cross sections. Preparation of strengthened earthwork appraisal form for reinforced earth retaining walls and soil nails strengthened earthworks. Preparation of standard spreadsheet for calculation of immediate settlement and primary consolidation.

N5 Ballaghderreen to Scramogue (Tender Stage), Mayo County Council

2019, RPS

Set up of HoleBase with road alignment, ground investigation points and soil tests from AGS files. Review of borehole logs to mark-up soft soils and peat based on description, SPT N value, moisture content and CPT tests. Calculation of soil volume that needs to be dug out for marl and peat. Characterisation of marl in term of unit weight, undrained shear strength, angle of shearing resistance, co-efficient of volume compressibility and coefficient of consolidation using the soil tests. Compilation of soil tests for calculation of reusability of soils. Selection of geosynthetics for stability analysis of embankment used in consolidation of marl and peat.

Chetana Ramanna

Senior Geotechnical Engineer

Teaching, IT Carlow

2016 – 2017

Worked as Assistant Lecturer teaching students of Civil Engineering, Construction Engineering, Architecture, and Quantity Surveyors. Subjects included Engineering Mechanics, AutoCAD, Project Management, Estimation, Foundation, and Retaining Walls.

Research Scholar, Indian Institute of Technology Madras

2007- 2012, IIT Madras, India

In probabilistic seismic hazard analysis, delineation of seismic area source zones in regions of distributed and/or diffused seismicity poses challenges due to scarce data, abrupt change of seismicity at the zonal boundaries, areal extent of seismic source unknown, varied zonation patterns for the same region and so on. In such cases, techniques such as zonefree methods are useful provided good earthquake catalogue and neotectonic data is available for the region.

Doctoral study examined a new methodology, primarily to adopt the latest probability methods such as adaptive kernel density estimation techniques. A secondary aspect was to resolve the scalability problem using the clustering technique of automatic zonation. It was concluded that the adaptive kernel technique along with the clustering technique of bandwidth determination is the best combination for determining the seismic hazard for a given site in the distributed and/or diffused seismicity region.

National Securities Clearing Corporation Limited, National Stock Exchange of India

2000 – 2002, Tata Consultancy Services

Carried out business requirement gathering, system analysis and design, software coding and testing, system support at launch of new business module additions, and module interface testing.

Trading System Database Management, Morgan Stanley Japan

2002 – 2003, Tata Consultancy Services

Assisted in managing the client data on stock market trading. This included optimizing the queries, performing clean ups, and backing up data.

Equity Trading System, National Stock Exchange of India

2003 – 2004, Tata Consultancy Services

Managed the project as project leader by assessing business requirements, analysing and designing the trading system. Was also responsible for imparting training, transfer of technological know-how to client's IT department, and maintaining and supporting existing system.

Credit Card Front End System, Citibank USA

2005 – 2007, Tata Consultancy Services

Carried out testing of the front end of the credit card system developed for Citibank.

Chetana Ramanna

Senior Geotechnical Engineer

Papers & Presentations

Ramanna, C. K. and Dodagoudar, G. R. (2011) Probabilistic seismic hazard analysis using kernel density estimation technique for Chennai, India. *Georisk Assessment and Management of Risk for Engineered Systems and Geohazards*, Vol 6, pp 1-15

Ramanna, C. K. and Dodagoudar, G. R. (2012) Seismic hazard analysis using the adaptive kernel density estimation technique for Chennai city. *Pure and Applied Geophysics*, Vol 169, pp 55-69

Ramanna, C. K. and Dodagoudar, G. R. (2014). "Impact Analysis of Seismic Source Area Extent on Hazard Estimate for Chennai City," *International Journal of Geotechnical Earthquake Engineering*

Ramanna, C. K. and Dodagoudar, G. R. (2014). "Effect of Epicenter Data Inconsistency in Determining Bandwidth and Its Subsequent Use in Hazard Analysis Using Kernel Smoothing Approach," *International Journal of Geotechnical Earthquake Engineering*

Ragunathan, P., **Ramanna, C. K.** and G. R. Dodagoudar (2012) "Seismic Hazard Analysis for Chennai Using Non-parametric Density Estimation Technique," *Journal of Structural Engineering*, SERC, Vol. 39, pp. 409-424

Ramanna, C. K. and G. R. Dodagoudar (2011) Kernel density estimation techniques to probabilistic seismic hazard analysis for South India. *III ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and Earthquake Engineering*, Corfu, Greece, pp17

Ragunathan, P., **Ramanna, C. K.** and Dodagoudar, G. R. (2011). "Seismic Hazard Analysis for Chennai Using Cluster-Based Kernel Density Estimation," *Proc. of Int. Conf. on Advances in Civil Engineering*, KL University, Vijayawada, pp. 32-46

Dodagoudar, G. R., Ragunathan, P. and **Ramanna, C. K.** (2011). "Seismic Input for Chennai Using Adaptive Kernel Density Estimation Technique," *ICSECM 2011*, Kandy, Sri Lanka, Pages 12

Ramanna, C. K. and G. R. Dodagoudar (2010) Seismic hazard for Chennai using kernel density estimation. *Indian Geotechnical Conference*, IGC 2010, Mumbai, 1, 147-150

Ramanna, C. K. and G. R. Dodagoudar (2010) Comparison of fixed and adaptive kernel techniques to seismic hazard estimation for Peninsular India. *14th Symposium on Earthquake Engineering*, Roorkee, I, 179-191

Ramanna, C. K., P. Ragunathan, and G. R. Dodagoudar (2011) Seismic input for Chennai using adaptive kernel method. *Indian Geotechnical Conference*, IGC 2011, Kochi, paper no. F-062, 1, pp265-268

Peter Corrigan

Senior Geotechnical Engineer & Principal

CAREER SUMMARY

Peter Corrigan is a Chartered Engineer since 2006 and a Principal of Golder Associates since 2014 (formerly an Associate from 2008). Peter is involved mainly in design of tailings and waste containment infrastructure as well as heap leach facilities. This generally takes projects across Europe, Africa and Asia from pre-feasibility and feasibility stages through ground investigation, conceptual and detailed design, tender and contract management for the construction and through to commissioning of the facility as well as closure planning. Other projects include slope stability assessments, liquefaction assessments, seismic assessments and design of remedial works, soft ground assignments, geotechnical instrumentation installation and monitoring and ground investigations.



Director (GeoTesting) until 2010

Peter was involved in founding the materials testing laboratory in 2002. Appointed Director in 2003. Duties involved in this role during the intervening years have included Deputy Quality Manager, Radiological Protection Officer and Project Manager as well as Director.

24 years with WSP / Golder

25 years of experience

Area of expertise

Geotechnical engineering, tailings engineering, landfill engineering

Language

English

EDUCATION

B.A.I Civil, Structural & Environmental Engineering 1998

ADDITIONAL TRAINING

SafePass Safety on site Training 2016

International Institute of Learning (IIL) Registered Trainer for Project Manager Fundamentals at Golder Associates 2012

PROFESSIONAL MEMBERSHIPS

Chartered Member of Engineers Ireland (C. Eng., M.I.E.I.) 2006

Member of the International Society of Soil Mechanics and Geotechnical Engineers (ISSMGE) 2006



Peter Corrigan

Senior Geotechnical Engineer & Principal

PROFESSIONAL HISTORY

WSP / Golder Associates Ireland Ltd

2005 - present

Project Manager, Geotechnical Engineer, Principal

Project Manager on numerous geotechnical projects including design and construction of tailings management facilities and landfills, heap leach facilities, soft ground design assignments and road construction. Mining and tailings work includes detailed design and permitting of an Integrated Mine Waste Facility (IMWF) for the Krumovgrad Gold Project in southern Bulgaria, design and construction supervision of the TMF2 at the Inata Mine in northern Burkina Faso, design and project management of a copper heap leach facility near Erdenet City in Mongolia, construction supervision of the Stage 4a and 4b TMF Upstream Raises at New Boliden's Tara Mines (lead & zinc) in Ireland, design review and construction supervision for the Stage 2 Upstream Raise at Vedanta's Lisheen Mine (lead & zinc) in Ireland, construction supervision and CQA for the Phase 2 BRDA at Auhinish Alumina, a 740,000m² composite lined bauxite residue disposal area in Co. Limerick, Ireland and design of a permanent cap for the Gortmore TMF at Silvermines, Co. Tipperary, Ireland. Landfill design work includes Phase 2 at Ballynagran Residual Landfill, Stage 1 Capping at KTK Landfill and Phase 1 at Usk Residual Landfill, all in Ireland. Transportation design work in Ireland includes design of a pre-loading option for a section of soft ground (peat) on the N56 Mountaintop to Illistrin Road - Phase 2, Earthworks Design Checks on the M50 Phases 2 and 3 Motorway Widening Scheme and Earthworks Design Checks on the Greystones Southern Access Route - Phases 1 and 2. Regular duties as a Project Manager / Geotechnical Engineer include performing field investigations, design work and construction monitoring for geotechnical assignments, carrying out regular slope stability assessments for a number of facilities, compiling construction specifications, assessing geotechnical instrumentation data, devising and completing site investigation programs.

Site investigation works have included data collation, tender preparation, tender assessment, site supervision, geotechnical logging, data analysis and interpretative report writing

GeoTesting (part of Golder Associates Ireland)

2002 – 2010

Project Manager, Geotechnical Engineer, Director

Founding member of the company. Project management of CQA supervision contracts for large motorway construction projects in Ireland including South Eastern Motorway (10km of motorway and 15 No. structures) and Finglas Ashbourne Road Scheme (16km of dual carriageway and 18 No. structures). Geotechnical investigations for numerous motorway construction projects in Ireland including Dundalk Western Bypass and Sligo Inner Relief Road and advising on material constructability based on field and laboratory observations. Project management of CQA supervision contracts for large landfill development projects including KTK Landfill (Phases 4 & 5), Kerdiffstown Landfill (Phase 1), Kyletalesha Landfill (Cell 13) and Ballyduff Beg Landfill (Cells 1 to 5) among others. Writing and reviewing of geotechnical and laboratory testing reports.

Golder Associates (UK) Ltd

1999 – 2001

Geotechnical / Materials Engineer

Geotechnical Engineer on construction of the Phase 4a Upstream Raise to the TMF on up to 15m of deposited tailings, involved in supervision of earthworks, supervision of ground investigations for borrow sources, drainage works and some ancillary concrete works, selection of fill materials, quantifying of volumes for monthly account certification by Resident Engineer.

Roadstone Dublin Ltd

1998 – 1999

Civil / Materials Engineer on road construction projects

Supervision of pavement crews, levelling of formations and subsequent blacktop mat depth determinations, determination of degree of compaction obtained using nuclear densities, tonnage requirement estimation,

WSP



Peter Corrigan

Senior Geotechnical Engineer & Principal

working with contractor and council engineers to solve problems arising on numerous contracts including the Naas Road widening scheme, Liffey Valley Shopping Centre, Carlow Relief Road, re-surfacing of Runway 16-34, Dublin Airport.

PROFESSIONAL EXPERIENCE

MINING

K Erdenin Huvi JSC / BluMon Group Copper Heap Leach Facility, Erdenet City, Mongolia

Year from 2016 to 2017

Project Manager

Project Manager for a Feasibility Study design for a copper heap leach facility near Erdenet City, Mongolia. Carried out site visit and meetings with development team. Project includes metallurgical column testing, stockpile resource assessment, site water balance development, design of heap leach and solution storage ponds, Metsim modelling, solution pipeline and pump design and closure planning. Oversaw design of heap leach facility and PLS, raffinate and emergency ponds including lining system design. Involved in the preparation of the Feasibility Study for the project.

TAILINGS

Krumovgrad Gold Project - Integrated Mine Waste Facility Design, Kardjali, Bulgaria

Year from 2012 to present

Project Manager / Engineer of Record

Project Manager for the Technical Phase Design including preparation of Construction Permits and the detailed design of the Integrated Mine Waste Facility for the Krumovgrad Gold Project. Project duration from 2012 to late 2015. Major components of the project included design of the IMWF and ancillary infrastructure such as reservoirs and sumps; development of a water management strategy which saw a zero discharge approach being developed, haul road and access road design; stability, seismic and liquefaction assessments; design of instrumentation systems, design of thickened tailings process and tailings discharge as well as preparation of health and safety and fire safety plans.

Inata Gold Mine, Design & Construction of TMF2, Soum Province, Burkina Faso

Year from 2015 to 2016

Project Manager and Design Team Leader

Project Manager and Design Team Leader for the design of downstream raise to the TMF2 at the Inata Gold Mine in the Sahel for Avocet Mining Plc. Project involved geotechnical studies on the Saprolite residual soils, development of an appropriate geometric design capable of tailings storage for the remainder of the LoM, development of the construction quality assurance protocols and construction supervision for the 12 month construction period from October 2014 to September 2015.

Rusal Aughinish Alumina Ltd. (Phase 2 Bauxite Residue Disposal Area BRDA), Co. Limerick, Ireland

Year from 2010 to 2012

Engineers Representative

Engineers Representative for the construction of the Phase 2 BRDA at Aughinish Alumina. Construction of this project took over two years to complete and involved the excavation of over one million cubic metres of rock along with the lining of 740,000m² with a composite GCL and HDPE lining system. Responsibilities included the management of a six person team looking after all aspects of the construction supervision and CQA, certification of monthly applications submitted by the Contractor, dealing with Contractor claims and variations and general administration of the contract. Project was completed on time and within the client's budget expectations. Other works included the compilation of a comprehensive CQA report and securing



Peter Corrigan

Senior Geotechnical Engineer & Principal

authorisation from the Regulatory Authority (EPA) for the use of the BRDA which included a formal presentation on the construction project and CQA to the EPA.

Aughinish Alumina Ltd. (installation of geotechnical instrumentation), Co. Limerick, Ireland Year from 2006 to 2007

Project Manager

Project Manager for the installation of geotechnical instrumentation into upstream rock fill stage raises sitting on bauxite residue within the Bauxite Residue Disposal Area from November 2006 to March 2007 and again in September 2011

Project included the supply, installation, commissioning and ongoing monitoring of geotechnical instruments which include vertical inclinometers, extensometers, vibrating wire piezometers and cassagrande standpipe piezometers. Subcontracted drilling works and personally managed the installations on site. Managed health and safety issues associated with drilling and installation works in caustic tailings (pH of 13). Prepared comprehensive report on the installation and commissioning of these instruments as well as periodic reports on the ongoing monitoring.

Sekisovskoye Gold Mine, Kazakhstan

Year from 2012 to 2013

Design Reviewer

Provided design review and construction supervision support for the remediation of Tailings Dam 3 at the Sekisovskoye Mine. Golder involvement was subsequent to a breach in the lining system and this project involved the re-working of the loam and re-lining of the geomembrane lining system.

Koka Deposit Due Diligence, Zara Project, Eritrea

Year 2014

Technical Reviewer

Reviewer for the design and location selection components of a proposed Tailings Storage Facility for the Koka Deposit as part of the Due Diligence of the Zara Gold Mine Project. TSF location and design had proven contentious for the Eritrean Department of Environment and hence was a key component in the Due Diligence process. Sale of the Koka Deposit was closed in early 2012.

Tara Mines Stage IVA Tailings Dam Raise, Co. Meath, Ireland

Year from 1999 to 2001

Junior Geotechnical Engineer

Junior Geotechnical Engineer and later Assistant Resident Engineer for the construction of the Phase IVA upstream tailings dam raise on up to 15m of deposited tailings from March 1999 to December 2001. Involved in supervision of earthworks, drainage works, ground investigations for borrow sources and some ancillary concrete structures. Carried out installation of geotechnical instruments and ongoing monitoring and interpretation of data. Responsible for selection of fill materials for dam wall construction and installation of drainage. Other duties included basic surveying and quantifying of volumes for monthly certification by the RE.

Tara Mines Stage IVB Tailings Dam Raise, Co. Meath, Ireland

Year from 2004 to 2006

Engineer Representative

Engineer's Representative for the construction of upstream tailings dam raise on up to 18m of deposited lead and zinc tailings during construction seasons from April 2005 to October 2006. Construction carried out on a plant-hire basis and controlled by Golder to maximise the Engineer's control over construction in very difficult ground conditions. Responsibilities included controlling where construction could occur based on geotechnical instrumentation data and meeting with Site Foreman to advise of the construction activities permitted. Responsible for geotechnical instrumentation (which included installation of new instruments, training technicians to monitor instrumentation and carried out interpolation of data), supervision of earthworks, slope stability assessment and shore protection, laboratory testing program and borrow area management. Set up an on-site laboratory for the testing of construction materials and trained laboratory technicians in carrying out relevant field and laboratory test methods.



Peter Corrigan

Senior Geotechnical Engineer & Principal

Prepared Annual As-built and Construction Quality Assurance Reports for submission to the Regulatory Authority.

Lisheen Mine (Stage 2 Raise), Co. Tipperary, Ireland

Year from 2011 to 2012

Engineers Representative

Engineers Representative for the construction of a 2m Upstream Raise to the existing TMF at the Lisheen Mine. Design involved a composite lining core to a rock fill embankment situated mainly on existing tailings at the facility. Duties involved ensuring compliance with the design, CQA, compilation of CQA Report and securing EPA Approval for the use of the facility, Project took one year to completion in 2012 and extends to about 3km in length.

Gortmore Tailings Facility, Silvermines, Tipperary, Ireland

Year from 2007 to 2008

Senior Geotechnical Engineer

Senior Geotechnical Engineer for the design of a capping system (21 hectares) of an old lead & zinc tailings facility at Silvermines. Capping system incorporated rock and topsoil layers to create a capillary break thus keeping the growth medium from the acidic tailings. Main problems associated with design included getting over 100,000 cubic metres of rock and topsoil out onto soft tailings. Developed construction methodology which incorporated use of geocomposites and geotextiles. Construction completed during 2008.

Former Mitsui Denman Plant, Little Island, Cork, Ireland

Year from 2005 to 2006

Project Manager

Project Manager for the construction of trial embankments on manganese tailings and subsequent installation of geotechnical instrumentation at the former Mitsui Denman facility during 2008. Field trial embankments were designed to determine settlement and compressibility of the tailings for future development. Managed the procurement of construction materials including geogrids and geotextiles on behalf of the client, supervised the deployment of geogrids and placement of fill onto the crusted tailings. Project included the supply, installation, commissioning and ongoing monitoring of horizontal inclinometers, vibrating wire piezometers and settlement survey points. Subcontracted drilling works and personally managed the installations on site. Prepared comprehensive report on the installation and monitoring of all instruments.

J. Declan O'Dwyer B.Arch MBA ATCL RIBA

CV [CV for general purposes]

Family Name: O'Dwyer

First Names: J. C. Declan

Nationality: Irish

Education: Primary & Secondary – Belvedere College Dublin

Third level: Architecture – University College Dublin – B.Arch. degree (hons)

Professional Practice Certificates in Architecture: RIAI & RIBA

Teaching Associateship at Trinity College London – A.T.C.L.

Postgrad: Business – Trinity College, Dublin – M.B.A. degree (thesis: Building Law)

Further Study: Airports Planning Course Cert., Loughborough University, UK

Airports Management Modules at Irish Management Institute

Membership of Professional Bodies:

Chartered Member, Royal Institute of British Architects (since 1982).

Skills: (Aviation planning): Aviation Planning Specializations
in I.C.A.O. 'Annex 14' Aerodrome (& Heliport) Standards, etc.
and in E.A.S.A. Aerodromes Certification Specifications, etc.

(Computer literacy): CAD, Illustrator, InDesign, Photoshop, etc.

(Languages): English, German, French

Present Position: **Partner in: O'Dwyer & Jones Design Partnership, Leeson Park, Dublin 6,**
established since 1984 [Aviation Planning & Architecture Consultants]

Professional Experience: Student architect at Zehetmeier & Furtwängler Architekten, Munich
Student architect at Scott Tallon Walker Architects, Dublin
Graduate Architect at Milton Keynes Development Corporation, UK

Architect & Planner at Aer Rianta Irish State Airports Authority

Commercial Development Superintendent at Aer Rianta

Airports Planning Manager at Aer Rianta

responsible for Physical Planning at the Irish State Airports

& responsible for planning control in vicinity of the State Airports

Personal Projects at Aer Rianta: Master Plans for Dublin Airport and Cork Airport (and for Shannon, with others).

Master Plans for Casement Military Aerodrome and Irish Air Corps HQ

Master Plan for Gormanston Military Aerodrome

Designs for ATC, Radio Station (Clare), & Airport Terminal facilities (3 Airports)

Hangars development & reconstruction at Casement Military Aerodrome

Presentation on Airport Planning at IATA Conference in Cameroon, W.Africa

Company Corporate Plan for Aer Rianta (reporting directly to CX)

Partner in private Architecture, Design, & Aviation Planning firm since 1984:

O'Dwyer & Jones Design Partnership, Aviation Planning Consultants

[this firm's current specialization is specifically in aviation planning, and
is the only independent aviation planning firm in Ireland]

– See page 2 for examples of projects carried out by this firm >>

O'Dwyer & Jones Design Partnership – professional experience – some examples of the firm's projects:

– See also: *O'Dwyer & Jones Design Partnership brochure*

Planning, design & construction of ALSAA Sports Complex (& Swimming Pools)
[largest in Ireland – for Aer Lingus Social & Athletic Association];
Variety of aviation-related architecture projects for Aer Lingus & for
Ryanair, & Cityjet, and FAI (Eircom Park aviation clearances) etc.
Master Plan for joint Civil and Military Development at Casement Aerodrome
[jointly for Ryanair and Department of Defence – Dublin CitySouth Airport];
Master Plan for Civil use of Gormanston Aerodrome – for PARC Aviation;
Detailed Master Plan for all Garda Síochána Headquarters Accommodation
[confidential project for Garda Commissioners & OPW];
Consultants on Aviation to Local Authorities for multiple Development Plans
incl. current Plans [South Dublin County Council, Kildare County Council, etc];
Consultations with Irish Aviation Authority and with Department of Defence
on behalf of Local Authorities, and of private developers near airports, incl.
consultations on aviation standards with ICAO, IAA, CAA (UK), FAA (USA);
Evaluations of Air Corps and Airport Operators' Safeguarding maps &
airport development proposals on behalf of several Local Authorities;
Analyses of Power Plant heights & emissions vis-à-vis Casement Aerodrome;
Preparation of Airport Safeguarding Maps for airport & aerodrome operators;
Master Plan for Civil development of former Soviet military airbase
at Mahlwinkel, Germany [for Marshall Aerospace, Cambridge Airport];
Airline facilities & Aircraft Stands layout at Aéroport Paris Charles de Gaulle
[for CityJet & Air France];
Feasibility study for civil development of Tököl military airbase, Budapest;
Airport Movement Logs analyses for Local Authorities [SDCC and Kildare Co.Co.];
Public Safety Zones designs and PSZ reports re Casement and Weston Airports
and for all aerodromes in Kildare;
Public Safety Zones review re Dublin Airport, and calculation of ICAO 'Obstacle
Limitation Surfaces' for Dublin Airport's new North Runway 10L/28R;
Planning (& permission got) for new private aerodrome at Erinagh, Co.Tipperary;
HSE Helipad & Heliport analyses for local authorities and for SHD applications;
Wind Turbines analyses vis-à-vis Aviation and Air Corps operations at multiple
locations all around Ireland (Kildare, Louth, Mayo, Waterford, Wicklow...);
Expert witness reports on aviation for Kilkenny Airport Judicial Review;
Expert witness presentation on aviation to *An Bord Pleanála* Oral Hearing;
Numerous Aviation Planning & Aeronautical Assessment Reports for
Planning Applications, Planning Appeals, and Large-scale (SHD/LRD) Housing
Development Applications, in vicinity of various Irish airports/aerodromes and
helipads/heliports –
at Dublin, Cork, Shannon, Ireland-West, Abbeyshrule, Ardagh, Clonbullogue,
Coonagh, Galway, Kerry, Kilkenny, Kilrush, Navan, Newcastle, Sligo, Waterford,
Weston, at Casement (& former Gormanston) Military Aerodromes, & helipads
at Beaumont, CorkUH, UHGalway UHLimerick, SligoUH, TallaghtUH, etc.



Joe Codd B. Agr. Sc. (For.) Dip. Sc. (For.) M.S.I.F. MArborA

Proposed Role: Forestry Specialist

Education, Qualifications and Memberships:

2021 – Professional Member of the Arboricultural Association. Mem no. PR7960

2020 - Quantified Tree Risk Assessment systems – QTRA Ltd. Reg no. 1763.

2020 - Certification on the Fundamentals of Reducing Emissions from Deforestation and Forest Degradation - Unitar and UN- REDD programme.

2017 - Present. Founding member and on the board of Forestry Careers Ireland.

2012 - Present. I am currently sitting my third term on the council for the Society of Irish Foresters. I am a technical councillor representing the interests of practicing forestry professionals.

2017 - Present. Member of Pro Silva Ireland.

2008 - Quantified Tree Risk Assessment systems – QTRA Ltd.

2008 - A Practitioners Guide to Visual Tree Assessment – QTRA Ltd.

2004 - 2006 B. Agr. Sc (Forestry) UCD (1.1).

2001 - 2004 Diploma in Science (Forestry) WIT (1.1).

Profile:

Joe has over 15 years' experience as a professional forester in Ireland and abroad. His roles have ranged from managing forestry environmental projects worldwide to carrying out due diligence on the purchase of multimillion-euro forestry portfolios on behalf of institutional investors and family wealth funds.

His experience is wide ranging and includes most aspects of forestry; from establishment to harvesting, including wind and solar and wind farm consultation, forest valuation, tree surveys, plantation purchasing, forest roading, woodland improvement and consultancy services. Joe is Project Supervisor Construction Stage (PSCS) approved.

Experience:

Veon are involved with a range of forestry projects and as a senior forester and tree officer, Joe project leads these operations, including carrying out tree and forest assessments for corporate companies such as Irish Rail, ESB and county councils completing tree surveys, reforestation projects worldwide, reporting on timber industries and their macro and micro trends, feasibility and markets studies, ESG and CSR projects with corporate companies trying to reduce their carbon footprints.

Joe is also responsible for forest portfolio acquisitions in Ireland and the UK for domestic investors and some of the largest family wealth offices in Europe. He works on Wind, Solar, Battery, Tourism and other projects supplying consultation on forest issues. Joe also works with a number of international consultants in the acquisition and management of country houses and landed estates with forestry. Joe also works as a forestry consultant to a range of energy companies such as ESB, ENERCO, Highfield Energy and ABO Wind on wind and solar projects.

Communication Skills:

Joe is responsible for public communication and presentations on projects as he is an excellent communicator. Joe often takes the responsibility of working with larger clients and public bodies on difficult operations where communication is key to the success of the project. Joe both leads and works easily within groups of people and shows loyalty and commitment to the team's objectives.

Work History:

Dates	Project	Project Role	Project Description
2014 - present	ESB Forestry Consultancy - Cappawhite - Boolnagleragh - Slieve Rusheen - Castlepook - Grousemount - Slieve Callan - and more	Forestry Consultant	Veon have worked on numerous Windfarms with the ESB as a forestry advisor. Veon identify appropriate felling licence type for felling requirements, identify suitable replanting lands to fulfil any replanting requirements for the felling licences and, in consultation with ESB Wind Development, secure the purchase of these replanting lands and provide estimates for the costs associated with the fulfilment of the licence.
2020 – ongoing	ESB land purchase framework	Forestry Consultant	Veon were accepted on to the ESB Land Acquisition Support and Afforestation Services Framework Agreement. Veon source and purchase on behalf of the ESB replacement lands for ongoing ESB Windfarms. Following purchase Veon are responsible for planting the purchased site and manage the forest on behalf of the ESB.
2020	Gortyrhilly and Inchamore Windfarms EIAR	Forestry Consultant	Veon were engaged by JOD to complete a forestry report looking at forestry operational requirements and assessing their impacts and carrying out an assessment of all mitigation measures. Veon were also asked to assess the replacement lands where any forest removal was necessary.
2020	Altcor and Farronrory Windfarms EIAR	Forestry Consultant	Veon were engaged to complete a forestry report looking at forestry operational requirements and assessing their impacts and carrying out an assessment of all mitigation measures. Veon were also asked to assess the replacement lands where any forest removal was necessary.
2017 - 2020	ABO Wind Forestry Consultancy -Clogheravaddy Windfarm Donegal	Forestry Consultant	Veon tendered with ABO wind to conduct felling and various associated environmental management. All felling was carried out in accordance with existing Best Practice as defined in the Forest Service Code of Best Forest Practice, Forest Service Harvesting guidelines and all other Forest Service guidelines. Prior to commencement Veon submitted harvest plans and associated Hazard Identification and Risk Assessment documentations.
2015 – present	Flagship tourism facility for the Dublin Mountains -	Forestry Specialist	Veon worked as part of a multidisciplinary team to carry out a feasibility study and develop a masterplan for a flagship tourism facility for the Dublin Mountains. Veons role was to liaise with the client and other project specialists in assessing suitable forest areas and to identify any constraints in developing these areas.
2007 - present	Establishment Programme from the Dept. of Agriculture	Director of Sales	Creating the opportunity for planting with the landowners. This role would also be responsible for sending in the application to the Forest Service for planting approval on behalf of the client.

			Responsibility for controlling the groundwork on the site including mounding, fencing, ordering plant numbers and planting etc.
2020 - present	Irish Rail	Tree Surveyor	<p>Veon are recruited to undertake assessments of numerous projects, sites and individual trees and woodlands on the boundary of Irish Rail properties, the public road and that of an individual private residence. Where Joe is the named Tree Surveyor. The trees are examined, geo tagged using a state-of-the-art geo referencing system with built in data analysing software and a photo taken before critical measurements were taken and observations made. A description was recorded of the tagged tree, species, age class, condition, actions to be taken, ecological, conservational and amenity value, potential damage impacts, exact tree location, tree height, distance from the track, importance to biodiversity and digital photo ID.</p> <p>Any recommended remedial works required were outlined. Hedgerows and significant tree groups in the surrounding area were examined and were subject to group description and assessment. The findings of the survey were recorded and presented in a tree survey report with attached shapefiles and attribute tables/excel files.</p> <p>A number of options were then supplied on the trees and woodland present in relation to medium term/long term work with potential replanting options and costs supplied.</p>

Work History:

2018 – Present: Business Development Director, Veon

2012 – 2018: Director of Sales, Veon (Previously FEL)

2009 – 2012: Regional Manager, Forest Enterprises Ltd. (FEL)

2007 – 2009: Forester, Forest Enterprises Ltd. (FEL)

2006 – 2007: Tree Surgeon, Australia Urban Tree Services.

2006 – 2006: GIS digitiser, Mallons Technology.



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MARTIN MURPHY, TECHNICAL SUPPORT FORESTER - BSc (Hons), Forestry; MSc (Agr), Forestry; M.S.I.F.

Education and Qualifications:

2021-2023 - MSc (Agr) by research (awarded)
2019-2020 - BSc (Hons) in Land Management in Forestry (1.1) 2016-2019 - BSc in Forestry (1.1)

Profile:

Martin currently works as a Technical Support Forester at VEON Ltd. In this capacity, he is responsible for preparing licence applications for all forestry activities undertaken by VEON. He also liaises with the Forest Service and the forestry and ecology team(s) around any licencing issues. Martin is also responsible for ensuring quality control for all licence applications (maps, harvest plans etc.), and is a technical member of the Society of Irish Foresters.

Experience:

Martin commenced his forestry education as a mature student at Waterford Institute of Technology, where he studied modules such as Applied GIS, Forestry and the Environment, Advanced Silviculture, Forest Protection, Sustainable Forest Management, Biodiversity Management and Sustainable Water Management Systems. As part of his undergraduate studies, Martin also engaged in a six-month internship in Killarney National Park, working amongst a team of international interns on a habitat restoration programme, where he gained valuable knowledge on the management of invasive species and woodland and bogland ecology. He subsequently pursued a Master of Science by research at UCD, working under professor Aine Ni Dhubháin. This programme provided him with experience in data collection and analysis, collaboration, and academic writing. Since joining VEON Ltd. in February 2023, Martin has further developed his skills in QGIS, in addition to various DAFM technologies, and he has worked on numerous licence applications, delivering comprehensive maps and supporting various teams. He has also worked alongside VEON's former Business Development Director Joe Codd on wind farm projects, assisting with assessment and report writing for a number of developments in Ireland.

Skills:

Martin is adaptable to working both independently and in various team environments. He possesses strong writing skills, complemented by strong interpersonal and oral communication abilities. With a detail-oriented approach to work, he recognizes the significance of delivering projects and reports with clarity and quality. At VEON, Martin plays a supportive role in assisting all teams, liaising with multiple staff members simultaneously and communicating effectively to help address their specific requirements.

Relevant work history:

2023-Present: Technical Support Forester, VEON Ltd., Leopardstown, Dublin 18
2018: Student Intern, National Parks & Wildlife Service - Killarney National Park, Co. Kerr

Seamus Murphy M.Sc. Environmental Forestry

Proposed Role: GIS Specialist

Education, Qualifications and Membership

2022 – Associate Member, Institute of Chartered Foresters
2021 – Associate Member, Society of Irish Foresters
2021 – Association of British Columbia Forest Professionals
2021 – Canadian Institute of Geomatics
2021 – Canadian Institute of Forestry
2021 – Geomatics Association of Nova Scotia
2021 – Commonwealth Association of Forestry
2021 – Bangor University – M.Sc. Environmental Forestry (1st)
2015 – University of London – Ph.D. Social Anthropology (Completed)
2010 – University of London – M.A. Social Anthropology of Development (2.1)
2007 – University College Dublin – B.A. Information Science & Sociology (2.1)

Profile:

Seamus has over 15 years' experience in academia and in the forestry/GIS sphere in Europe and Canada. He is a member of many forestry and Geomatics organisations. Coming from an academic and industry background, Seamus has a wealth of experience in anthropology, research, forestry and GIS. Seamus has recently taken on the role of GIS and Certification manager, where his role entails supporting Veon's Forestry, Ecology and Arboriculture teams with GIS, surveying and certification requirements. This includes setting up field surveys through Field Maps, maintaining the integrity of the GIS and partaking in projects where GIS is a core element. Seamus is also responsible for managing the day-to-day tasks of Forest Certification, including auditing, stakeholder engagement, management planning, training and implementing change.

Experience:

Seamus graduated from UCD in 2007 and went on to the University of London where he gained a Masters and PHD in Anthropology. He took part in several research projects where he was responsible for coordinating activities, data sourcing and compiling research papers. He returned to college to study Environmental Forestry and graduated with a first-class honours in 2021. During his time studying forestry in Bangor, he worked as a research assistant for the university and then as a forestry technician for Nature Conservancy Canada where he surveyed wildfire burn severity and Mountain pine beetle outbreaks. In the course of these projects he developed models to analyse spatial patterns of conifer regeneration and disturbance histories. Further experience was gained in GIS where he was responsible for establishing boundary lines and prepare maps for pre-auction felling contracts. These maps included riparian assessments, stream classifications and soil samples for the forestry teams. As these projects progressed, he implemented accuracy assessments of GPS receivers according to reporting standards and contract targets. Seamus also worked on a remote sensing project scoping standing timber volumes using Lidar. In this project he developed a QGIS plug-in for processing lidar imagery which led to an prototype app to extract satellite and vector data for forestry and wildfire tasks.

PROFESSIONAL PROFILE



Cecilia Kirwan – Senior Electrical Engineer

EMPLOYMENT & RELEVANT WORK EXPERIENCE

March 2023 to date TLI Group

Position: Senior Electrical Engineer

Main duties include:

- Feasibility Studies and Technical Assessment for Underground Cable (UGC) grid connections on renewable projects
- HV/MV UGC Route Detailed Design, Cable Rating, Report Writing
- Project management and client engagement.

Recent Projects:

- Grangeford Solar Farm (SF) 110 kV UGC Connection
- Cuilmore SF 38kV UGC Connection
- Rossmore Wind Farm (WF) 110 kV UGC Connection
- Aghowle WF 110 kV UGC Connection
- Ballyboughlin SF 38 KV UGC Connection

2021 – 2023 Comreg

Position: Radio Spectrum Engineer

Duties:

- Regulatory oversight and technical assessment of applications for radio spectrum licenses
- Represented ComReg in ECC working group meetings and drafted technical reports and regulatory documents
- Detailed interference and line of sight analysis using transmission planning tool HTZ

2013- 2021 Career Break

2005 – 2013 Vodafone Ireland

Position: Senior Radio Planner

Duties:

- Coverage and capacity planning of sites for mobile network rollout 2G/3G/4G,5G
- Use of radio planning tools for mobile network planning Planet and Atoll, HTZ
- Site selection and analysis using engineering tools and field visits to perspective sites
- Radio Planning and Optimization of mobile networks. Implement network interventions to change parameters

1997- 2005 ESB International

Position: Senior Project Engineer

Duties:

- Project managed the construction, installation, and commissioning of ESB 110 kV Sub stations
- Equipment procurement for transmission stations and OHLs, technical specification, tender evaluation and acceptance testing
- Produced Electrical and Physical drawings for ESB transmission stations
- Planned, budgeted, and scoped the yearly maintenance work for ESB high voltage overhead lines
- Planned, designed the construction of ESB high voltage transmission

Training: -

- Bachelor of Electrical/Electronic Engineering Hons – University College Cork
- Chartered Engineer (M.I.E.I)
- Eur Ing Certification
- ESB Induction

Professional Skills: -

- HV Transmission Engineering
- Radio & Mobile Telecoms Engineering
- Project Management
- Drafting technical documents
- Technical Analysis
- Design
- Budgeting

Personal Skills: -

- Problem Solver
- Good Communicator
- Analytical
- Team Oriented
- Results focused

Computer Application Skills: -

- QGIS
- Cableizer
- Radio Planning Tools
HTZ,Atoll,Planet

Curriculum Vitae

Dr. Ciarán Smyth

ciaran.smyth5@gmail.com
+353 (0)86 1679823
11 Maple Grove, Ashbourne, Co. Meath, Ireland

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Qualifications

PhD:	Photonics Group, School of Physics, Trinity College Dublin	2013
MSc:	Adaptive Sensors Group, School of Chemistry, Dublin City University	2007
BSc:	Applied Physics, Dublin City University	2004

Surveying Experience

- | | |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| June 2020 | Scott Cawley Ltd. - Breeding Bird Surveys |
| | <ul style="list-style-type: none">Undertook dawn surveys of sites in the Dublin area, noting bird song, behaviour and numbers. |
| August 2019 | A Rocha Kenya - Bird & Insect surveys |
| | <ul style="list-style-type: none">Worked on conservation projects, ranging from arthropod surveying to specimen collection in newly purchased lands and bird counts. |
| July 2019 | Colobus Conservation, Kenya - Bird & Monkey Surveys |
| | <ul style="list-style-type: none">Worked on newborn surveys, monitoring baboon and colobus monkey troops to evaluate their populations. Also compiled a photographic bird guide for the site. |

Other Work Experience

- | | |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2019 - Present | Noms Health & Wholefoods Store
Phibsborough, Dublin |
| | <ul style="list-style-type: none">Wholefoods retail & admin work. |
| 2017 - 2019 | Start-Up Entrepreneur
Bring Your Own |
| | <ul style="list-style-type: none">Start-up enterprise selling unpackaged wholefoods.Successful integration of business concept into Noms Health & Wholefoods Store. |
| 2014 – 2016 | Postdoctoral Researcher & Lecturer
Universidad de Los Andes, Bogotá, Colombia |
| | <ul style="list-style-type: none">Development and application of a Light Sheet Fluorescence Microscope.Lectured a course in physics to 1st-year students. |

Education

2007 - 2013

PhD Research Student
Photonics Group, Trinity College Dublin

- Application of Raman spectroscopy towards compound detection and quantification.

2004 – 2007

MSc Research Student
Adaptive Sensors Group, Dublin City University

- Application of conducting polymers towards gas sensing.

Education Outreach Officer
Biomedical Diagnostics Institute, Dublin City University

- Development and delivery of a course entitled 'Me and My Body' (MAMBO) to 8-13 year olds on a summer course with the Centre for Talented Youth Ireland (CTYI).

Skills

- **Computers** – Microsoft Office (Word, Excel, PowerPoint), ImageJ, Origin, MatLab
- **Languages** – English, Spanish (functional), Irish (basic), French (basic)
- **Presentation & Communication** – Conference presentations, Lecturing
- **Management** – Student Projects, Working to teaching and research deadlines

Enda Flynn

Castlecarragh, Riverstown, Dundalk, Co. Louth.

eflynn042@yahoo.ie

087 2606993

Skills, Training, and Experience:

Ornithology:

- Over 20 years' experience in ornithology.
- Completed surveys for Birdwatch Ireland including the Countryside Bird Survey and the Irish Wetland Bird Survey (I-WeBS).
- Volunteered as a Little Tern Warden at Baltray for the Louth Nature Trust.
- Investigated the disturbance caused to nesting Black Guillemots in support of an extension to drilling work beyond mid-May at Greenore Port.

Marine mammals:

- Over 8 years' experience in MMO work.
- Qualified Marine Mammal Observer (MMO) as recognised by the JNCC.
- Completed MMO work for the construction of a berth at Greenore Port.
- Seal surveys in support of an application for a new ferry service on Carlingford Lough.
- Seal surveys to monitor the effects of a new ferry service on population sizes in Carlingford Lough.
- MMO work at the construction of a ferry slipway in Carlingford Lough.

Bats:

- Over 8 years' experience in bats.
- Experienced in the identification of bats using both heterodyne and full spectrum recorders.
- Completed the 'Certificate of Bat Acoustics Analysis' course organised by Neil Middleton (BatAbility).
- Ongoing online training organised by BatAbility since 2019.
- Completed a two-day bat tree roost identification and endoscope training workshop in 2019 organised by Bat Conservation Ireland.
- Completed Brown Long-Eared bat roost training in Co. Meath.
- Have held a derogation licence for bat roost disturbance since 2019 (renewed annually).
- Contributed to Bat Conservation Ireland's 'Batlas 2016-2020' project.

- I annually participate in the 'All Ireland Daubenton's Bat Waterway Survey' in Co. Armagh and Co. Louth.
- Performed summer and winter bat roost surveys in Co. Kildare.
- Bat survey in Ballymakellett quarry on behalf of the local resident's association.

Entomology:

- Regularly undertake butterfly transects for the Irish Butterfly Monitoring Scheme.
- Contributed records to Dragonfly Ireland for over 15 years.
- Participate in the Garden Moth Scheme.

Wildlife Photography

- Wildlife photography guide for Cooley Wildlife Photography.
- Published wildlife photographer. Photographs used in Irish, British, European, and Asian publications (cooleyphotography.net).

Employment History:

- 1982 – Present: Glazier. Self-employed since 1994.
- 2011 – 2016: Wildlife photography guide at Cooley Wildlife Photography.
- 2014 – 2021: MMO work at Greenore Port and Carlingford Lough.

Education:

- 1977 – 1981: St. Paul's High School, Bessbrook.

Interests:

- Hillwalking Regularly hike in the Cooley mountains whilst recording its flora and fauna.
- Athletics Complete 5km 'parkruns' weekly. Regularly run 5km road races.

Michael Ian Hoit

Personal details

Address: 8 Trix Road
Norwich
NR2 2HB

Date of birth: 17/07/1978

Telephone: 07799 770896

Email: mikee_hoit@hotmail.com

Education

University of East Anglia, September 1996 - June 1999

Ecology BSc - 2.1: *Marine and Coastal Ecology; Aquatic Ecology; Conservation Biology; Population Genetics; Evolutionary Genetics; Behavioural Ecology; Ornithology; Landscape*

Dissertation: *Breeding habitat selection by European Nightjar (*Caprimulgus europaeus*) in commercial forestry*

Little Heath School, Reading, September 1989 – June 1996

A Level, June 1996: Geography - A, Biology - C, Chemistry – C, General Studies - A

GCSE, June 1994: 2 Grade A*, 5 Grade A, 3 Grade B

Employment History

Freelance Ecologist & Project Consultant, September 2003 - present

Working on a freelance basis on a variety of Environmental Impact Assessments. This has primarily entailed bird surveys for proposed wind farms, and also for housing and national infrastructure schemes. In the course of this I have been working almost continuously on sites involving vantage point-based flight observations, wintering and breeding bird surveys. During this period I have averaged over 700 hours of vantage point surveys per year in both lowland and upland habitats; this is primarily focused both on identifying the species of birds of prey present, and the number of individuals of each species. Alongside this has been a similar volume of work undertaking surveys wintering and migrating birds, frequently entailing systematic counts of large numbers of, for example, shorebirds and wildfowl.

In addition I have worked on surveys following the specific methods for the below:-

Red-throated Diver	Black-throated Diver	Red Kite
Marsh Harrier	Hen Harrier	Montagu's Harrier
White-tailed Eagle	Golden Eagle	Osprey
Merlin	Peregrine	Black Grouse
Quail	Stone-curlew	Dotterel
Golden Plover	Barn Owl	Short-eared Owl
Nightjar	Black Redstart	

This work has been performed using the relevant Scottish Natural Heritage and Natural England guidelines. I have also carried out nocturnal surveys on many projects. In total I have surveyed in excess of one hundred sites (full list

available if required), and as a result have undertaken extensive post-construction monitoring surveys. These are often at remote and exposed localities, giving me a thorough understanding of the requirements of working safely in these conditions.

These projects often involves working with other surveyors; in this regard I am experienced in organizing a group work schedule and coordinating visits with landowners and others who may be utilize the site.

In August 2015 I consulted on a proposed windfarm and powerline development in Eastern Cape, South Africa. This involved advising on the project design, including methods for surveying target species, and fine-tuning the methodology to bring it up to UK standards. I also undertook VP and transect surveys for various large raptors, bustards and Blue Cranes, while training local surveyors in best practice and SNH/NE techniques. Additionally, I carried out live-trapping of small mammals using Elliot traps on site.

In February 2018 I worked as consultant on proposed energy projects on behalf of Asian Development Bank. I was responsible for the final design and survey methodology used by the scheme, as well as carrying out preliminary bird counts. Consequently, a primary role was to ensure that local teams were trained to carry out future surveys and submit data to the highest standard.

Working on a more ad hoc basis, I have also accrued considerable experience in the following surveys:-

Water Vole – assessing presence, monitoring, and trapping and relocating (under licence holder supervision).

Bats – emergence and activity surveys and, under licence holder supervision, roost checking.

Great Crested Newt – nocturnal observation, bottle- and pitfall-trapping, and mitigation.

Principal Ecologist (part time), Arcadis UK Ltd, March 2017 – present; Senior Ecologist (part time), Hyder Consulting/Arcadis UK Ltd, August 2015 – September 2016

Consulting on and undertaking bird and mammal surveys (bats and Water Voles) for ongoing development projects. Responsibilities include digital recording (onto iPads and tablets) of bird observations from vantage point surveys, mapping of species of conservation concern from both wintering and breeding bird transects, plus advising on survey schedule methods. The latter also included on-site training of less experienced surveyors.

Tour Guide, Wild Earth Travel, June 2018 – present

Employed as on-board naturalist and general tourist guide on a small cruise ship around Scotland (with future trips scheduled). Responsibilities included ensuring safety of the passengers, while ensuring details of the cruise were communicated to clients (both individually and as a group), as well as providing them with knowledge of the details visited. I also liaise with other members of staff and crew so that together we can run efficient excursions, and recording wildlife sightings.

Tour Guide, Eagle Eye Tours, April 2018 – present

My main roles on previous and planned tours are, again, to provide a safe and informative experience to clients; as well as a wildlife guide, I ensure that all the travel and accommodation logistics during the trip run as smoothly as possible. As with the above role, this requires good time management abilities, and to be flexible and proactive while communicating any changes to our plans.

Raptor Counter and Guide, Batumi Raptor Count/Batumi Birding, Republic of Georgia, September – October 2015

I spent part of the autumn 2015 season as a raptor counter for this long term project counting and digitally recording birds of prey and other migrant birds, undertaking the identification and ageing of species through intensive observation over twelve hour shifts. While most of this was as a volunteer, I was also employed on several days as a guide for ecotourism groups. This comprised escorting them around the hilly terrain, locating birds and showing them to clients, while explaining raptor identification, moult and ageing.

Bank Clerk, Royal Bank of Scotland Group, July 1999 – October 2003

During this period I fulfilled a number of roles within the group, with both the NatWest Bank and One Account divisions. These included the financial auditing of large corporate accounts, sterling and international large money

transfers, and general maintenance and administration of bank accounts. It also provided a good background in liaising with others on a professional and confidential level.

Professional Qualifications

Holder of SNH Schedule 1 Licence for survey and research.

CSCS – Academically Qualified Person certified until January 2024.

I am qualified to operate Rigid-Hulled Inflatable Boats and other vessels, having completed Royal Yachting Association Powerboat Level 2 in October 2012.

JNCC Marine Mammal Observer qualification gained in October 2013; BOEM Gulf of Mexico Protected Species Officer certificate gained in January 2016.

Radio-tracking training received via Wild Frontier Ecology in October 2015.

Other relevant experience

I have been deeply interested in wildlife for as long as I can remember, being an avid birder since childhood. Since my teens I have developed a keen interest in bird identification and taxonomy, with a particular fascination in gulls, geese and seabirds, in particular around the British Isles. I have travelled to many parts of the world to study the bird and mammal life, initially around Europe and the Middle East, and more recently to visit all the other continents. This included trips to Turkey, Jordan, Israel and Egypt between 2004 and 2006 to look for birds of prey and other species on migration. In this period and more recently I have also travelled extensively around the world seeking seabirds, whales and dolphins; this has taken me to both western and eastern North America, Canary Islands, Cape Verde, the South Atlantic and Antarctica, New Zealand, and (in conjunction with the latter) a seldom travelled route through the western Pacific to Japan. I also spend time observing reptiles, dragonflies and butterflies when time allows.

When possible, part of my spare time is spent on varied related voluntary work. Other than the above-mentioned raptor count, this has included: occasional bird and marine mammal surveys for the Sea Watch Foundation and Birdwatch Ireland's Seatrack project; butterfly surveys; and from 2013 to 2017 I have also helped to staff an educational watchpoint aimed at showing members of the public nesting Peregrine Falcons.

Prior to working as an ecologist, I was also involved in conservation work (on a voluntary basis) around my home town of Reading between 1989 and 1999. During this period I carried out habitat management, Common Bird Censuses and Wetland Bird Surveys. Recently I have recommenced these activities around the Norfolk Broads.