

Appendix 1.1 Author Qualification and Experience

EIAR Chapter	Contributor & Qualifications	Years of Experience
1: Introduction	Mr. Andrew O'Grady, BSc., MSc., Senior Environmental Consultant, Jennings O'Donovan & Partners Limited	18
	Mr. Pdraig O' Dowd, B.A., GradDip, MSc, Junior Environmental Scientist, Jennings O'Donovan & Partners Limited	2.5
	Ms. Kathlyn Feeney, BSc, Environmental Consultant, Jennings O'Donovan & Partners Limited	1.5
2: Project Description	Mr. Andrew O'Grady, BSc., MSc., Senior Environmental Consultant, Jennings O'Donovan & Partners Limited	18
	Ms. Sarah Moore, BSc., MSc, Senior Environmental Consultant, Jennings O'Donovan & Partners Limited	18
	Mr. Pdraig O' Dowd, B.A., GradDip, MSc, Junior Environmental Scientist, Jennings O'Donovan & Partners Limited	2.5
	Ms. Kathlyn Feeney, BSc, Environmental Consultant, Jennings O'Donovan & Partners Limited	1.5
3: Alternatives	Mr. Andrew O'Grady, BSc., MSc., Senior Environmental Consultant, Jennings O'Donovan & Partners Limited	18
	Ms. Siobhan Roddy, BSc., Environmental Consultant, Jennings O'Donovan & Partners Limited	1.5
4: Planning & Policy	Mr. David Kiely, BSc., MSc., Director, Jennings O'Donovan & Partners Limited	40+
	Ms. Breena Coyle, BA, MSc MRTPI HD Planning and Environmental Planning Law, Senior Planner, Jennings O'Donovan & Partners Limited	15
	Ms. Siobhan Roddy, BSc., Environmental Consultant, Jennings O'Donovan & Partners Limited	1.5
5: Population and Human Health	Mr. David Kiely, BSc., MSc., Director, Jennings O'Donovan & Partners Limited	40+
	Ms. Sarah Moore, BSc., MSc, Senior Environmental Consultant, Jennings O'Donovan & Partners Limited	18
	Ms. Siobhan Roddy, BSc., Environmental Consultant, Jennings O'Donovan & Partners Limited	1.5

EIAR Chapter	Contributor & Qualifications	Years of Experience
6: Biodiversity	Mr. Brian Madden, BA. Mod. (Hons), PhD, MCIEEM, Director, Biosphere Environmental Services	25+
	Dr John Conaghan, BSc, PhD, MCIEEM, Environmental Consultancy, Enviroscope.	13+
	John Curtin, BSc, Environmental Scientist, Eire Ecology	15+
	Joe Adamson, BSc, MSc, MCIEEM, Environmental Scientist, BioSphere Environmental Services	25+
7: Aquatic Ecology	Dr. Edward McCormack, Ph.D., BSc, Principal Ecologist, Aquafact	25+
	Ms. Aisling Hearty, M.Sc., Senior Ecologist, Aquafact	6
8: Ornithology	Nick Henson BSc, MSc CEnv MCIEEM, Consultant Ecologist, Biocensus	20+
	Ellis Perry, BSc, MSc, Consultant Ecologist, Biocensus	4+
	George Wilkinson, BSc, MSc Senior Ecologist, Biocensus	7+
9: Soils and Geology	John Whiteford, BSc (Hons), Director, Whiteford Geoservices Ltd	25+
10: Hydrology and Hydrogeology	Michael Gill, P. Geo., B.A.I., MSc, Dip. Geol., MIEI, Environmental Engineer and Environmental Consultant, Hydro-Environmental Services	23+
	Conor McGettigan, BSc, MSc, Environmental Scientist, Hydro-Environmental Services	5+
	Nitesh Dalal, B.Tech, PG Dip., MSc, Environmental Scientist, Hydro-Environmental Services	1
	Mr. David Broderick, BSc, H. Dip Env Eng, MSc, Hydrogeologist, Hydro-Environmental Services	17
11: Noise and Vibration	Mr. Shane Carr, MPhil., Director, Irwin Carr Consulting	21+
	Mark Burke BSc (Hons), Noise Modeller, Irwin Carr Consulting	5
	Mr. Brendan O Reilly, BSc, MSc, Senior Noise Consultant, Irwin Carr Consulting	40+
12: Landscape and Visual Assessment	Mr. Richard Barker, MLA, PGD, BA, MILI, Director, Macro Works Limited	25+
	Ms. Amy Doran, B.A., Graphics Specialist, Macro Works Limited	9
	Ms Bridget Macfarlane, BA, LVIA Consultant Macro Works Limited	6
13: Air Quality and Climate	Ms. Sarah Moore, BSc., MSc, Senior Environmental Consultant, Jennings O'Donovan & Partners Limited	18

EIAR Chapter	Contributor & Qualifications	Years of Experience
	Mr. Pdraig O 'Dowd, B.A., GradDip, MSc, Junior Environmental Scientist, Jennings O'Donovan & Partners Limited	2.5
	Ms. Kathlyn Feeney, BSc, Environmental Consultant, Jennings O'Donovan & Partners Limited	1.5
14: Shadow Flicker & EMI	Ms. Sarah Moore, BSc., MSc, Senior Environmental Consultant, Jennings O'Donovan & Partners Limited	18
	Ms. Kathlyn Feeney, BSc., Environmental Consultant, Jennings O'Donovan & Partners Limited	1.5
15: Archaeology and Cultural Heritage	Mr. Tony Cummins, BA., MA., Senior Archaeologist, John Cronin & Associates	28
16: Material Assets & Other Issues	Mr. Andrew O'Grady, BSc., MSc., Senior Environmental Consultant, Jennings O'Donovan & Partners Limited	18
	Ms. Kathlyn Feeney, BSc., Environmental Consultant, Jennings O'Donovan & Partners Limited	1.5
	Mr. Kevin Hayes, B.Eng., M.Eng., Founding Director and Engineering Contracts Manager, Ai Bridges Limited	25+
	Mr. Patrick Tinney, B.Eng. Electronics, B.Eng. Computer and IT Systems, Communications Engineer, Ai Bridges Limited	12
17: Traffic & Transportation	Mr. David Kiely, BSc., MSc., Director, Jennings O'Donovan & Partners Limited	40+
	Mr. John Doogan, NC., NDip. CEng. (HND), Senior Roads Technician, Jennings O'Donovan & Partners Limited	35
18: Interactions of the Foregoing	Mr. David Kiely, BSc., MSc., Director, Jennings O'Donovan & Partners Limited	40+
	Ms. Sarah Moore, BSc., MSc, Senior Environmental Consultant, Jennings O'Donovan & Partners Limited	18
	Mr. Pdraig O' Dowd, B.A., GradDip, MSc, Junior Environmental Scientist, Jennings O'Donovan & Partners Limited	2.5



Profession

Civil Engineer

Position with firm

Director

Years of Experience

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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

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

Curriculum Vitae

Andrew O'Grady MSc, BA, AIEMA



Profession

Environmental Consultant

Position with firm

Senior Environmental
Consultant

Years of Experience

17

Educational Qualifications

- Masters (MSc) in Environmental and Resource Management, Free University Amsterdam, The Netherlands, 2004
- Geography with Honours (2:1 BA), University of Coventry, United Kingdom, 2002

Professional Qualifications

- Associate with Institute of Environmental Management and Assessment (IEMA)

KEY HIGHLIGHTS

Andrew is a highly educated and flexible multilingual environmental professional with over 17 years' experience of Environmental Impact Assessment (EIA) project management and planning compliance for wind farm, solar, mining and other power projects in a range of geographies.

- Experienced in project management and administration of large EIA projects.
- Collation and review of EIS/EIAR and ESIA Reports.
- Preparation of environmental, construction and spoil management plans, SuDS reports, AA Screening and socio-economic and lighting assessments.
- Skilled in financial management including budgeting and invoicing.
- Proficient in Microsoft Word, Excel, Outlook and PowerPoint.

EXPERIENCE

February 2015 – Present

Jennings O'Donovan & Partners Limited

- **Gortlougha Wind Farm, Co. Cork (54MW)**
Preparation of EIAR and planning application documents for a wind farm project through the SID process. **Project Manager**
- **Tullaghmore Wind Farm, Co. Galway (36MW)**
Preparation of EIAR and planning application documents to the Local Authority. **Project Manager**
- **Cronalaght Windfarm Repowering, Co. Donegal**
Preparation of EIAR and planning application documents for a wind farm repower project submitted to the Local Authority. **Project Manager.**
- **Killala Energy Storage Facility, Co. Mayo (15MW)**
Preparation of a planning application and Environmental Report for an Energy Storage Facility (battery). **Project Manager**
- **Barnesmore Wind Farm Repower Project, Co. Donegal (50MW)**
Preparation of planning application documents for a wind farm repower through the SID process including Public Information Days. **Deputy Project Manager.**
- **Killala Community Wind Farm Turbine 6, Co. Mayo (3.4MW)**
Preparation of planning application including an Environmental Report and associated documents for a single turbine extension for a wind farm in Co. Mayo. **Project Manager.**
- **Cloghan Wind Farm, Co. Offaly (36MW)**
Preparation of planning compliance documents including CEMP, CMS and Spoil Management Plan.
- **Bunnahowen Wind Farm, Co. Mayo (3MW)**
Preparation of an amendment planning application for a 3 turbine wind farm. **Project Manager**
- **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. **Project Manager**
- **Donegal Towns & Villages Wastewater Treatment, Ramelton-Milford-Rathmullan, Co. Donegal**
Preparation of an Environmental and Planning Report for a new wastewater treatment plant, pumping stations and pipeline infrastructure.
- **Wexford Untreated Agglomerations Study, Arthurstown, Co. Wexford**
Preparation of an Environmental and Planning Report for a new wastewater treatment plant, pumping stations and pipeline infrastructure.

Andrew O'Grady CV (cont'd)

- **Clonaslee Water Treatment Plant, Co. Laois**
Preparation of a Construction Method Statement for a water pipeline from the borehole to the treatment plant as part of a Part 8 planning application.
- **Tullynamoyle Wind Farm, Co. Leitrim (18MW)**
Preparation of Photomontages and Shadow Flicker assessment for a 7 turbine wind farm.
- **Cronalaght Wind Farm Extension, Co. Donegal (15MW)**
Preparation of planning compliance documents for a 5 turbine wind farm in County Donegal. **Project Manager**
- **Yellow River Wind Farm, Co. Offaly (87MW)**
Preparation of CEMP, Erosion Control Management Plan and other documents for planning compliance for a 29 turbine wind farm in County Offaly.
- **Meenadreen Wind Farm, Co. Donegal**
Preparation of a Natura Impact Statement (NIS) for a new operations building to serve a 38 turbine wind farm.
- **BSB Community Wind Farm, Co. Waterford (36MW)**
Preparation of EIS and associated documents for a 11 turbine wind farm in County Waterford, including liaison with Waterford County Council and scoping with relevant consultees. **Project Manager**
- **Ballytobin Solar Farm, Co. Kilkenny**
Preparation of an Environmental Report and associated documents for a 5MW solar farm in County Kilkenny, including liaison with Kilkenny County Council. **Project Manager**
- **Rathmaiden Solar Farm, Co. Meath**
Preparation of an Environmental Report and associated documents for a 5MW solar farm in County Meath. **Project Manager**
- **Pollnalaght Wind Farm, Co. Tyrone**
Submission of a Schedule 6 application to the Rivers Agency and a Section 46/47 application to the Loughs Agency. **Project Manager**
- **Altamuskin Wind Farm, Co. Tyrone**
Submission of a Schedule 6 application to the Rivers Agency and a Section 46/47 application to the Loughs Agency. **Project Manager**
- **Cloonty Wind Farm, Co. Antrim**
Development of SuDS report and Schedule 6 application to the Rivers Agency to discharge planning conditions on a wind farm in County Antrim.
- **Crighshane Extension Wind Farm, Co. Tyrone**
Preparation of a CMS, CEMP, SuDS and Spoil Management Plan for the proposed wind farm development in County Tyrone.
- **Seegronan Wind Farm Extension, Co. Tyrone**
Preparation of various documents for a planning application for the proposed wind farm in County Tyrone, including CMS, CEMP, SuDS report and Spoil Management Plan. Submission of Schedule 6 application to the Rivers Agency and a Section 46/47 application to the Loughs Agency.
- **Foiladaun Wind Farm, Co. Cork (11.5MW)**
Planning Compliance Report and associated reports and appendices for a 5 turbine windfarm in County Cork. Client liaison and consultation with Cork County Council and relevant statutory authorities such as IFI and NPWS. **Project Manager**
- **Derrinoghra Wind Farm, Co. Sligo (4.6MW)**
Environmental Impact Statement for a 2 Turbine windfarm in County Sligo including client liaison, sub consultant management and consultation with Sligo County Council. **Project Manager**
- **Cnoc Wind Farm, Co. Tipperary**
Preparation of planning compliance documents including Construction Management Plan, Haul Route Survey and Spoil Management Plan for a wind farm in County Tipperary.
- **Brockaghboy Extension Wind Farm, Co. Derry**
Preparation of a CMS and CEMP and associated planning compliance documents for a proposed wind farm in County Derry. Advising client on spoil management areas and submission of a Schedule 6 application to the Rivers Agency.

Andrew O'Grady CV (cont'd)

- **Dromadda Beg Wind Farm, Co. Kerry**
Planning application for additional works associated with a consented wind farm in County Kerry. **Project Manager**
- **Ballycumber Wind Farm, Co. Wicklow**
Preparation of an Environmental Report and EIA Screening report for the underground cable grid connection from the wind farm to the ESB substation.
- **Ballybay Wind Farm Grid Connection, Co. Kilkenny & Co. Tipperary**
Preparation of Section 5 application and associated documents for the grid connection route from Ballybay Wind Farm in County Kilkenny and Thurles Substation in County Tipperary. **Project Manager**
- **Stephenstown Small Scale Embedded Generation Facility, Co. Dublin (4MW)**
Project management and development of planning application for 2 no. diesel generating facility. The role included development of an Environmental Report and Traffic Management Plan and client and local authority liaison. **Project Manager**
- **Ballincurry Wind Farm, Co. Tipperary**
Project management of the design element for development of a 2 no. turbine windfarm in County Tipperary. **Project Manager**

July 2011 – Nov. 2014 Environmental Resources Management (ERM); Dublin - Consultant

- Project coordination of large ESIA (Environmental & Social Impact Assessment) projects in Ireland, the UK and West Africa to international standards such as IFC Performance Standards;
- Project Management of smaller EIA and Due Diligence projects;
- Responsible for financial management and invoicing;
- Ensuring reports delivered to deadline and within budget;
- Quality control and review of technical reports prior to delivery to client;
- Due Diligence data room reviews and risk assessments for capital acquisitions;
- Undertaking internal audits for ISO:9001 certification; and
- Compiling proposals and participating in business development activities such as the company strategy.

Jan. 2005 – June 2009 WSP Environmental Ltd, London, UK - Environmental Consultant

- Project management of large EIAs;
- Responsible for financial management and invoicing;
- Built and managed client relationships and liaised with design teams to ensure project delivery on time and within budget;
- BREEAM Environmental Audit Tool for Offices, Retail and Schools;
- Phase 1 environmental due diligence audits for mergers and acquisitions;
- Sustainability Appraisals; and
- Energy Performance Certificates (EPCs).



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

Breena 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, Breena 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.

Breena 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**

Breena 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.



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 | - Gortyrachilly | - 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 MacDonald Group Ltd.
Warren Pickrell Associates

Curriculum Vitae

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



Profession

Environmental Scientist

Position with firm

Junior Environmental Scientist

Years of Experience

2.5

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 ERSO: 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

Siobhan Roddy *BSc. (Hons)*



Profession

Environmental Scientist

Position with firm

Junior Environmental Scientist

Years of Experience

4

Educational Qualifications

- BSc in Environmental Science and Technology, Dublin City University, 2021

KEY HIGHLIGHTS

Siobhan is a self-motivated, enthusiastic Environmental Scientist who studied Environmental Science in Dublin City University where she received a Second-Class Honours Grade 1. Siobhan worked in Ringsend Wastewater Treatment Plant where she was employed as a Process Engineer/ Sampling Technician. She also has experience working in a microbiology lab where she was the senior person responsible for Endotoxin Testing of drug products and medical device. This job involved method development and validation and required adherence to strict GMP/GLP guidelines, SOP's, and safety procedures. In her current role Siobhan is involved in the preparation of EIARs.

Siobhan's key skills include:

- Laboratory skills
- Team management
- GIS competence
- Aseptic techniques
- Sampling skills
- Teamwork
- Technical report writing
- IT Skills
- Data review
- Data Analysis and Interpretation
- Communication
- Problem-solving

EXPERIENCE

March 2024 – Present

Jennings O'Donovan & Partners Limited

Responsibilities:

- Conducting feasibility studies to evaluate the potential environmental impact of proposed projects which involves the use of ArcGIS.
- Writing of EIAR chapters which includes evaluating the effects on ecosystems, air and water quality, biodiversity, and social factors.
- Carrying out desk-based research and interpreting data.
- Staying up to date with environmental legislation and guidelines and interpreting regulatory requirements.
- Liaising with colleagues, clients, and stakeholders.

Junior Environmental Scientist

December 2021 – March 2024

**Charles River Laboratories (CRL),
Ballina, Co. Mayo**

Responsibilities:

- Routine and validation Endotoxin Testing of medical devices and drug products. Writing validations for new testing methods.
- Updating company and client SOP's ensuring they comply with current European and US Pharmacopoeia.
- Siobhan was responsible for ordering reagents and consumables needed to carry out the endotoxin testing. This involves taking monthly stock counts.
- Reviewing data ensuring it complies with GMP and ensuring it is to the highest standard before the results are sent to our clients.
- Weekly calls with clients to discuss scheduling of testing.
- Training new and current staff.

Microbiology Laboratory Technician

March 2020 – August 2020

**Celtic Anglian Water (CAW),
Ringsend Wastewater Treatment Plant, Dublin**

Responsibilities:

- Sampling: water and sludge sampling daily, analysed them and prepared the results which were used in the monthly reports for the company.

Siobhan Roddy CV *(cont'd)*

- Regulation monitoring: Gas, odour, noise, and radiation monitoring around the site weekly which included calibration and maintenance of the equipment.
- Recorded and compiling data daily for the company reports and was responsible for maintaining records.
- Calibrating and troubleshooting instrumentation.
- Research project looking at the productivity of the Thermal Hydrolysis Plant which resulted in significant cost savings for the company.

Process Engineer/Sampling Technician

ACHIEVEMENTS

- Spoke at the 9th annual UNESCO youth forum in Paris 2015.

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).

CURRICULUM VITAE

John Conaghan BSc PhD MCIEEM

Botanical/environmental consultant with 25 years of consultancy experience, specialising in the survey and assessment of vegetation and habitats. Throughout this period, survey work has been undertaken in a wide range of habitats throughout Ireland including fens, grasslands, bogs, woodland and coastal habitats. Over the past 25 years Dr. Conaghan has carried out a large number of vegetation/ecology surveys with the vegetation ecology of bogs/fens and the distribution of Irish rare plants, particular fields of interest.

Trading as Enviroscope Environmental Consultancy.

Full Member of the Chartered Institute of Ecology and Environmental Management (CIEEM).

CONTACT ADDRESS / PHONE NUMBER / E-MAIL

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Craughwell, Co. Galway

Phone number: 087-2239858
E-mail: johnconaghan18@gmail.com

ACADEMIC QUALIFICATIONS:

Ph.D. Botany,
NUI Galway, 1995.

B.Sc. Botany (Hons),
University College Galway, 1989.

Examples of ecological work conducted

2021 to 2024 – Habitat and botanical surveys of Wind Farm sites at Firlough, Co. Mayo, Clooncunny, Co. Sligo, Ballykett Wind Farm, Co. Clare, Moanmore Lower Wind Farm, Co. Clare.

2014-2025 – Vegetation and flora surveys, including monitoring of the protected plant *Saxifraga hirculus*, at Oweninny Wind Farm, Co. Mayo (on-going)

2022-2025 – Habitat and vegetation surveys along Shannon Blueway corridor (Carrick-on-Shannon to Leitrim), with focus on Alluvial forest.

2020 to 2022 – Preparation of pre-screening Reports and Natura Impact Statements for conifer clearfell, reforestation and forest roads within the Coillte estate. Screening and NIS documents for 63 Coillte forestry projects were reviewed and compiled. This work involves the assessment of potential adverse effects on SACs/SPAs and the identification of any mitigation measures.

2020 – Survey and assessment of vegetation and habitats within Sonnagh bog SAC and Glendree bog SAC. Habitat/vegetation distribution was surveyed and classified in accordance with the scheme devised for the National Survey of Upland Habitats.

2017 - Survey of vegetation and habitats along the proposed routes of the Galway city bypass. Grassland and heath habitats were most commonly encountered.

2015 and 2016 – Characterization and mapping of fen vegetation at Tory Hill, Co. Limerick and Ballymore fen, Co. Westmeath. Surveys conducted for the Office of Public Works.

2010 to 2022 - Botanical surveys and habitat mitigation measures for windfarm developments in blanket bog areas of Counties Galway (Finnaun), Donegal (Straness), Leitrim (Garvagh Glebe) and Tyrone (Dunaree).

2009 to 2015 – Ecological advisor for Coillte-EU LIFE project ‘Demonstrating Best Practice in Raised Bog Restoration in Ireland’. Work involved providing advice regarding tree/shrub removal and drain-blocking on previously afforested peatland sites and the subsequent monitoring of bog vegetation recovery.

2001 to 2007 – Ecological advisor for Coillte-EU LIFE project ‘Restoring Active Blanket Bog in Ireland’. Work involved advising with regard to tree/shrub removal and drain-blocking on afforested peatland sites and subsequent monitoring of bog vegetation recovery.

2006 to present – Native woodland restoration plans

A total of 20 Native woodland plans surveyed and compiled for a range of private clients and Coillte. Woodland sites were surveyed and restoration plans were drawn up in conjunction with an approved forester.

1998 to present – Survey of the distribution and ecology of selected rare plant species in Ireland including counties Galway, Mayo, Donegal, Sligo, Roscommon and Longford. Plants species surveyed included fen species such as *Eriophorum gracile* and *Pyrola rotundifolia*. Surveys conducted for the National Parks and Wildlife Service.

Other relevant information

Throughout my working career I have, through the course of various work projects, become familiar with a variety of computer programmes and their application with regard to habitat/vegetation surveys. These include Excel, Access, Mapmate and Arcview. I am also familiar with the operation of hardware and software involved in the mapping of habitats/vegetation, i.e. QGIS.

In addition to work-related ecological surveys I have a keen interest in the distribution of wild plant species in Ireland. I am a member of the Botanical Society of Britain and Ireland and has been vice-county recorder for West Galway since 1996.

I hold a full, clean, Irish driving licence.

JOHN CURTIN



Moyglass, Kylebrack, Co. Galway, Ireland | 00353 (0)85 1179428 | Info@EireEcology.ie

DIRECTOR | PRINCIPAL ECOLOGIST

I am an experienced ecologist with a high skillset over several disciplines. Originally, a field worker with experience in ornithological surveys & monitoring, botanical & habitat identification and mammal surveys. I have completed season long bat surveys for several large scale wind and solar farm projects. In addition, I have prepared numerous stage 1 and 2 Natura Impact Statements and Ecological Impact Statements.

EDUCATION

- **B.Sc., Environmental Science** [1st class honors] NUIG 2004 – 2009
Dissertation: *Investigations into the wetland plant communities of the Burren National Park*
- **Outdoor Pursuits**, FETAC, Achill Island OEC 1999 – 2000
Mountain leader, Kayaking level 2 coach, orienteering, windsurfing

MEMBERSHIPS

- **Bat Conservation Ireland Council Member** 2017– Present

NPWS LICENCES

- C014/2025 (Licence to handle bats)
- DER/BAT 2025-177 (Licence for roost disturbance; all bat species)
- 032/2025 (Licence to photograph & film bats)

VOLUNTEERING

- **Bat Conservation Ireland**
 - Co-presented a workshop on windfarms & bats @ 10th Irish Bat Conference 2023
 - BATLAS 2020 volunteering 2019 -2016
 - Presented bat roost in trees course 2019
 - Presented workshop on New Technologies 9th Irish Bat Conference 2017
 - Daubenton's Bat Waterway Survey, 2014 – 2015
- **Vincent Wildlife Trust**
 - Roost Count Portumna Bat Box Scheme 2018
- **Galway Bat Group**
 - Guided walk Kinvara 2017
- **NPWS Rebecca Teesdale**
 - Static Monitoring of cave occupied by Lesser Horseshoe 2018
- **Hen Harrier Survey** 2015
- **Moyglass Group Water Scheme – Assistant Secretary** 2015 – present
- **I-WeBS counts – Galway Bay Counts** 2015

EMPLOYMENT HISTORY

- ORNITHOLOGICAL SURVEYS

The windfarm industry rightly requires exhaustive ornithological surveys prior and post construction in order to assess the potential risks to birds. John has taken an active role in such surveys since 2014. He has in-depth experience covering a variety of species and methodologies including; Breeding bird Surveys, Wintering Birds, Hen Harrier Surveys, Red Grouse Tape Lure Surveys, and Waterbird point counts.

- BAT SURVEYS

Conducting bat surveys since 2012 including wind & solar farms, industrial developments, hotels, period homes and one off houses. Includes; roost identification, dawn and dusk transects and erection of static detectors. Also experienced in call analysis and report writing. Successfully applied for derogation licenses for counts, destruction and modification to roosts. Performed as Ecological clerk of works.

- WINDFARM POST CONSTRUCTION COLLISION MONITORING

Overseeing the use of three dog and handler teams assessing bird and bat collisions at windfarms in Ireland since 2015. We have surveyed 16 windfarm sites and have conducted intensive trials assessing the effectiveness of curtailment as a strategy to minimise bat fatalities.

- HABITAT & BOTANICAL SURVEYS

Numerous surveys since 2010 for projects ranging from screening assessments, windfarm sites, road schemes, industrial developments and community biodiversity. Habitats surveyed include woodland, peatland, grasslands, intertidal. Identification of Annex I habitats. Species surveys completed for presence of *Vicia orobus* (Apple Data Centre site, Athenry 2014) & *Eriophorum gracile* (R336 road widening 2012).

- NATURA IMPACT STATEMENTS

Over 40 Stage 1 and 2 Natura Impact Statements since 2010 alongside Environmental Impact Statements and rEIA's for quarry sites.

KEY SKILLS

Ornithological Surveys | Breeding Bird transects, Brown & Shepard Upland Breeding Wader, Hen Harrier Breeding & Winter Roost Surveys, Vantage Point, Tape Lure Surveys for Red Grouse under license.

Bat survey | Roost identification, dusk & dawn surveys for windfarms, EIA's and AA's

Windfarm Collision Searches | Searches conducted with trained dog. GPS routes logged

Habitat survey | Annex I habitats, Fossitt (Irl), NVC (UK)

Report writing | Appropriate Assessment Screening, Bat report, Biodiversity report

Mapping | Mapinfo, GPS

Other | Plant identification, mammal tracks, Marsh Fritillary (*Euphydryas aurinia*)

COMPUTER LITERACY & EQUIPMENT

Microsoft | Word, Excel, PowerPoint

Environmental Software | QGIS, QField, MapitGIS, Kaleidoscope Pro, R

Equipment | EM Touch Pro 2, SM3, SM4 & SM Mini, Night Vision camcorders with IR floodlights; Canon XA10 and Sony nightshot, Infra-red camera; Guide track 19mm thermal scope, Leica Trinovid 10x42 Binoculars, Leica Televid Spotting Scope

REFEREES

Upon request

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Riverchapel,
Courtown,
Co. Wexford,
Ireland.

Mob: (087) 756 9657

E-mail: adamsonjoe91@gmail.com

Qualifications and Affiliations:

1994	M.Sc (Agric.) Environmental Resource Management, UCD, Dublin, Ireland
1988	B.Sc Graduate of the Royal Society of Chemistry (GRSC), Thames Valley University, UK
Affiliations:	Chartered Institute of Ecology and Environmental Management

Previous Experience:

August 2014 to present: Consultant Ecologist based in North Wexford

Specialisation: Ecological Surveys, Ornithological Surveys

Most significant projects:

Ecological Clerk of Works for a solar farm in Co. Waterford

Currently conducting oversight during the construction phase of the project. Liaising with the site Project Manager on the installation and monitoring of silt traps on watercourses at the site, in addition to advice regarding potential problems that may have an impact on ecological issues, during the course of the project

Ornithological Survey of a proposed wind farm in Co. Kerry, Ireland

Currently conducting, for the past eight years, pre- and post-construction vantage point surveys, to assess the site for the presence of White-tailed Eagles and other raptors, in addition to general bird surveys. Conducted pre- and post-construction surveys for Red Grouse

Ornithological Survey of proposed wind farms in Co. Cavan, Co. Donegal and Co. Mayo, Ireland

Currently conducting ongoing pre-construction vantage point surveys to assess the site for the presence of Golden Eagle and Hen Harrier and other raptors, in addition to general bird surveys. Conducted pre-construction surveys for Red Grouse at the Mayo site

Habitat, Mammal and Ornithological Survey for a proposed wind farm in Co. Carlow, Ireland

Conducted pre-planning surveys, including identification and assessment of an Annex I Raised Bog habitat

Ecological Impact Assessments in Co. Wicklow, Co. Meath and Co. Kildare, Ireland

Conducted ecological impact surveys of various industrial development projects involving road schemes, quarries and landfills. Produced Ecological Impact chapters for the EIS and screening and appropriate assessments, where necessary

Ornithological Survey of proposed wind farms in Co. Longford and Co. Roscommon, Ireland

Carried out winter and summer vantage point and transect surveys, with a particular emphasis on raptors and wildfowl frequenting the site

Ornithological Survey to complete a request for further information on a proposed cycle track/walking trail in Killarney National Park, Co. Kerry, Ireland

Conducted vantage point surveys on blanket bog habitat to determine the presence and numbers of Greenland White-fronted Geese frequenting an area adjacent to the proposed cycle track/walking trail

Ornithological Survey of a proposed wind farm in Co. Wicklow, Ireland

Conducted vantage point surveys, with a particular emphasis on assessing the site for large raptors including Red Kite and Common Buzzard

August 2008 to August 2014: Senior Ecologist for Malachy Walsh and Partners Consulting Engineers, Tralee, Co. Kerry, Ireland

Specialisation: Ecological Assessments, Ornithological Assessments, Habitat Restoration and Creation, Hydrological Assessments, Peat Stability Assessments

Most significant projects:

Ecological Assessment of nine proposed wind farms in Co. Kerry, Co. Mayo, Co. Galway, Co. Limerick, Co. Waterford and Co. Tipperary, Ireland

Prepared and presented an ornithological brief of evidence at an oral hearing for a forty eight turbine wind farm development in Co. Mayo

Conducted fieldwork to assess habitats and flora on site. Assessed fauna identification and abundance through direct observation of bird, mammal and invertebrate species

Conducted Hen Harrier vantage point surveys

Conducted upland bird surveys and general bird surveys

Conducted Nightjar Surveys

Conducted Red Grouse Surveys

Conducted surveys of Kerry Slug at proposed wind farms in Co. Galway and Co. Mayo

Conducted bat detection surveys at five proposed wind farms

Assessed collision risk at a wind farm in Co. Tipperary through corpse searches and monitoring of carcass removal

Carried out screening and appropriate assessments for three of the proposed wind farm sites

Produced environmental impact assessment reports of the proposed wind farm developments on floral and faunal aspects of the environment with specific attention to potential impacts of turbines on threatened bird species such as Hen Harrier, Merlin, Red Grouse and Golden Plover

Ornithological Survey of a proposed cycle track/walking trail in Killarney National Park, Co. Kerry, Ireland

Conducted a summer and winter bird survey of proposed trail route. Produced report and presented findings at steering group committee meetings

Project Manager for the restoration and creation of wetland habitats at a permitted wind farm in Co. Cork, Ireland

Rehabilitated an area of disturbed habitat within the wind farm site through creation of a wetland, as part of a mitigation agreement with the developer

Restored the impacted upland blanket bog habitat of the wind farm, post-construction

Monitored wetland vegetation regeneration using sample plots

Monitored water quality of surface water drainage within the site through hydrochemical sampling and Q-sampling for freshwater invertebrates

Environmental Officer for a 27 turbine wind farm construction phase in Co. Cork, Ireland

Produced weekly environmental and geotechnical site audits and reported directly to the Resident Engineer and Site manager

Liaised with relevant consultants regarding on-site monitoring of protected bird and mammal species

Liaised with consultant Archaeologists in areas of archaeological sensitivity

Conducted hydrochemical water quality monitoring of surface waters and monitored stream crossings near turbine construction

Inspected silt traps on a daily basis and liaised with site foreman regarding construction in sensitive peat areas

Inspected refuelling stations and monitored fuel spillages on site

Ecological Assessment of a proposed electrical cable interconnector between Wales and Ireland

Conducted fieldwork using Extended Phase 1 methodology to assess habitats and flora along terrestrial route corridor. Completed ecology chapter of EIS

Ornithological Assessment of proposed road bypass in Clara Co. Offaly, Ireland

Conducted transect counts of bird species and assessed presence of Barn Owl along proposed route

Bat Detection Surveys of two bridge upgrades in Co. Tipperary and Co. Cork, Ireland

Conducted presence/absence surveys and evaluated importance of bridges as bat roosts prior to structural improvement

Hydrogeological and Geotechnical Impact Assessment of a proposed mixed-use development in Tralee Co. Kerry, Ireland

Produced technical impact assessment reports of the proposed development on water, geology and soils aspects of the environment. Identified karst and drainage features on proposed site. Completed geotechnical chapter of EIS

Peat Stability Study of eight proposed wind farms on upland blanket bog environments in Co. Kerry, Co. Clare, Co. Cork, Co. Tipperary, Ireland and Co. Tyrone, Northern Ireland

Conducted peat stability fieldwork at proposed wind farm sites including gouge core sampling and peat depth probing using von Post classification, shear vane testing and hydro-chemical testing of water bodies. Evaluated drainage and assessed sites' suitability for construction of infrastructure on upland blanket bog habitat. Completed geotechnical chapters of EIS

Peat Stability Study of proposed pump storage reservoirs in Co. Cork and Co. Tipperary, Ireland

Conducted fieldwork at proposed reservoir site including gouge core sampling and peat depth probing using von Post classification and shear vane testing. Evaluated site access and slope and assessed sites' suitability for construction of infrastructure on upland blanket bog habitats.

2004 to July 2008: Project Manager for Minerex Environmental Ltd, Dublin, Ireland.

Most significant projects:

Extended Phase 1 Habitat Surveys of 10 proposed wind farms in Northern Ireland

Conducted fieldwork to assess habitats and flora on site. Assessed fauna identification and abundance through direct observation of bird, mammal and invertebrate species

Conducted Hen Harrier vantage point surveys and produced a collision risk model based on observations for a proposed wind farm site in Co. Tyrone

Conducted upland bird surveys and general bird surveys for a proposed wind farm site in Co. Tyrone

Produced environmental impact assessment reports of the proposed wind farm developments on floral and faunal aspects of the environment with specific attention to potential impacts of turbines on threatened bird species such as Hen Harrier, Merlin, Red Grouse and Golden Plover

Hydrological and Geotechnical Impact Assessments of 10 proposed wind farms on upland blanket bog environments in Ireland and Northern Ireland

Conducted fieldwork at proposed wind farm sites including gouge core and peat depth probing using von Post classification, shear vane testing and hydro-chemical testing of water bodies. Evaluated drainage and assessed sites' suitability for construction of infrastructure on upland blanket bog habitat.

Produced technical impact assessment reports of the proposed wind farm developments on water, geology and soils aspects of the environments, with specific attention to potential for ground instability and bog slides / bursts.

Heritage Council Project for Peatlands Study of County Longford, Ireland

Identified 14 undesignated raised bogs in Co. Longford. Delineated ecotope boundaries within the high bog. Surveyed cutaway areas to determine regeneration potential and ecological value. Recorded type and period of disturbance activity, principally drainage and peat harvesting. Identified threats, conservation status and habitat restoration and management potential for each site.

National Road Infrastructure Development – New Schemes, Realignment and Bypasses

Conducted geological, hydrological and hydrogeological environmental impact assessment on the N17 Realignment in Co. Sligo Ireland.

Identified karst and drainage features along route and produced geotechnical report on the potential impact on turloughs close to the proposed road scheme.

Dublin Road Improvement Scheme

Conducted Tier 1 and Tier 2 sub-surface site investigations of contaminated land along the Dublin Road Improvement Scheme, Bray, Co. Dublin, Ireland. Interpreted laboratory data and produced technical report.

Ecological and Geotechnical Assessments of Transmission Mast Locations in Co. Cork and Co. Mayo

Conducted ecological and geotechnical impact assessments for transmission mast upgrades on machair and upland blanket bog habitats for RTÉ.

Produced ecological and geotechnical impact assessment reports of the proposed upgrades with specific attention to designation status of the existing sites.

2003 – 2004: EU LIFE Project Officer for BirdWatch Ireland, Murrough Wetlands, Newcastle, Co. Wicklow, Ireland

Most significant project:

Restoration and rehabilitation of an 89 hectare coastal wetland site within The Murrough Wetlands in Co. Wicklow.

Created an additional wetland by manipulating the existing drainage within the site, through diverting and controlling surface water from drainage ditches and excavation of seasonally flooded agricultural grassland to create a series of interlinking shallow ponds.

Managed the restoration of calcareous fen Annex I habitat through ditch-blocking and removal of unwanted vegetation.

Managed the clearance and reprofiling of drainage ditches and scrape to provide and enhance habitat for Annex I breeding and wintering birds.

Produced management plan for the site.

Established project advisory group for liaison and discussion with other organizations relevant to the project.

Produced a seasonal grazing regime to attract breeding waders and wintering geese.

Produced an arable planting regime to attract wintering Annex I wildfowl and wintering passerines.

Surveyed entire site using GPS and produced map using GIS.

Monitored bird populations on site using Countryside Bird Survey techniques.

Monitored butterfly, moth and dragonfly populations on the site.

Produced interim progress reports for EU LIFE.

2003: Field Ornithological contractor for various environmental consultants

Most significant projects:

Field Ornithologist, BirdWatch Ireland, Dublin, Ireland

Conducted field surveys on three transects for the Countryside Bird Survey.

Monitored bird population and habitat changes during the breeding season.

In 1993, monitored Little Tern breeding colony in Co. Wicklow. Monitored and assessed impacts of human disturbance on breeding success.

Field Ornithologist, Biosphere Environmental Services, Wicklow, Ireland

Monitored Hen Harrier movements for proposed wind farms in Co. Tipperary, Co. Donegal and Co. Cork.

Conducted field surveys of nesting and foraging areas and surveyed habitats for other protected species, where relevant.

Field Ornithologist, Hibernian Windpower, Dublin, Ireland

Monitored seabird movements on existing wind farm at Carnsore Point, Co. Wexford, with a particular emphasis on four species of tern.

Studied effects of potential mortality on all bird species passing through the wind farm.

Analysed results and issued guidelines through final report.

1996-2003: Environmental Scientist, ENSR International, Westford, MA, U.S.A

Most significant projects:

1999-2001 - Gulfstream Natural Gas Pipeline, Mulberry, Florida, U.S.A

Delineated wetland extent and boundaries for natural gas pipelines in Florida, Georgia, Mississippi and Alabama using US Army Corps of Engineers Wetland Delineation Methodology. This entailed wetland hydrology assessment, GPS surveying, aerial interpretation of wetland locations, mapping, soils and flora identification.

Conducted field surveys for threatened and endangered fauna. Monitored Bald Eagle nesting behaviour and disturbance during pipeline construction.

Monitored American Kestrel, Red-cockaded Woodpecker and Florida Scrub Jay locations along pipeline route as part of the Environmental Impact Assessment.

Surveyed Florida Black Bear, Gopher Tortoise, Florida Mouse, Sand Skink and Eastern Indigo snake habitats during construction phase of the pipeline route.

Surveyed endangered upland scrub plant habitats. Identified and relocated plants prior to pipeline construction.

Surveyed habitats for exotic and nuisance species including Brazilian Pepper, Cogon and Natal Grass and Australian Pine. Delineated extent of coverage and implemented a control plan during pipeline construction.

1997-2003 - Phase I and II Environmental Impact assessments on petroleum stations, retail stores coal-fired power plants and military facilities in U.S.A, Singapore and Malaysia.

Performed site inspections, subsurface excavation, hydrology and soil characterization, and contaminant assessment. Interpreted laboratory data and produced technical impact assessment reports.

2002 - Wetland rehabilitation, Cape Cod, MA., USA

Managed the rehabilitation of a cranberry bog on Cape Cod, MA by monitoring extent of wetland plant regeneration, hydrology and wetland soil development.

1986-1989: Surface Coatings Chemist, Imperial Chemical Industries, U.K and Australia

Most significant projects:

Conducted research and development of surface coatings for the automotive and decorative paint industry. Researched novel clear coats and U.V. absorbers. Conducted quality control and assurance on existing surface coating products.

Ellis Perry, Consultant Ecologist

Core skills

Ornithological field surveys

- Transect and Vantage Point surveys for breeding and wintering bird assemblages and specific species
- In farmland, woodland, heathland, wetland and coastal areas
- In the UK (England and Scotland) and overseas (Ireland)

Bird Collision Risk Modelling

Ecological Impact Assessment

Reporting

Project Management

Data Analysis

Construction Site Card Registration:

13597354

Level 1 First Aid at Work

Wildlife photography

Details

Qualifications

BSc Hons Zoology

MSc Species Identification and Survey Skills

Memberships

Associate member of CIEEM

Sussex Ornithology Society Member

PROFILE

Ellis has a breadth of ecological knowledge after undertaking his undergraduate Zoology and postgraduate Species Identification and Surveying Skills degrees. He currently has achieved associate membership for the Chartered Institute of Ecology and Environmental Management. Ellis is a consultant ecologist with a keen interest in ornithology with a drive to operate as a lead or contribute within a wider team and frequently striving to develop his ornithological knowledge further. He has undertaken ROLO Health & Safety Training, is CSCS certified and holds a valid Emergency First Aid at Work training.

RELEVANT EXPERIENCE

Ellis joined RSK Biocensus after two years of experience within the industry working with Jacobs. As a consultant ecologist he has gained valuable industry experience within the sector to provide technical advice on potential constraints to developments.

He has a wealth of experience in protected species survey methodology, practical implementation and technical reporting for the typical relevant survey types. Ellis has led and assisted a wide variety of survey types including: preliminary ecological appraisal, bats, water vole, otters, badgers, great crested newts, hedgerows and reptiles. Additionally also providing mitigation guidance as an Ecological Clerk of Works for nesting birds.

Ellis has a keen interest in birds in his own time having travelled across the country to RSPB and Wildlife Trust reserves, undertaking wildlife photography as a hobby as well as developing this further professionally having led bird surveys for RSK Biocensus for wintering and breeding bird assemblages within grassland, woodland, wetland and scrub habitats and targeted surveys for specific protected species such as nightjar, woodlark and stone curlew. Subsequently also providing advice for further survey having written baseline reports and produced collision risk modelling assessments. This experience is backed up by a robust knowledge of ecological legislation and an understanding of the breadth of fauna and flora that exist within the UK.

Since joining RSK Biocensus, he has also undertaken project management for a variety of project types with particular focus on projects sensitive to ornithological features including solar farms and wind farms with a high standard for delivering detailed ornithological impact assessments, collision risk modelling assessments and managing complex bird survey scopes internally and for external subcontractors for a variety of sites within the UK and overseas.

Key project experience

Laister Planning Ltd, Medmerry – West Sussex – 2023

Ellis led and assisted breeding bird surveys alongside other experienced ornithologists the redevelopment of a caravan site. The site contained a mosaic of grassland, hedgerows, line of trees, scrub, urban habitat types. The proposed development also borders the RSPB Medmerry reserve which regularly supports a wide variety of ornithological receptors throughout the year including breeding waders (e.g. avocet), passage migrants (e.g. Kentish plover) and wintering waterfowl (e.g. Brent goose). Due to the proximity to the reserve, the works required the recording of the current assemblage within the 'Stilt Pools' during the survey.

Greensource Ltd, Limerick/Cork – Republic of Ireland – 2023 - 2025

Ellis assisted multiple bird surveys including vantage point, wintering bird transects and hinterland driven surveys for a proposed wind farm development in Limerick and Cork, Ireland. The results of these surveys are to be included in the impact assessment, collision risk modelling and aid in informing the wind farm design after the identification of potential receptors which will be of consideration to the proposed development for species of particular concern such as hen harrier.

In 2023 he also produced collision risk modelling of vantage point data collected between 2020-2023 for a wind farm in Cork, Ireland. The results of the assessment identified 11 ornithological receptor species of potential concern to the proposed development and designated sites in the surrounding area (SPA, SAC etc.) and detailed the estimated impacts and turbine layout impacts to ornithological receptors which aim to reduce potential fatalities to the key species identified in the report.

Additionally for this client in 2024/25, he utilised a suite of sub-contractor data from over 4-years of surveys to inform an ornithological impact assessment (EIAR) of another proposed wind farm within co. Limerick and co. Cork, Republic of Ireland. As part of the assessment, additional appendices to the chapter were required whereby Ellis collated the data to review the ornithological baseline present and evaluated the populations of notable species (e.g. Birds of Conservation Concern Ireland 5 Amber and Red List, Annex 1 and Schedule 1 species of the Wildlife Act) for further consideration within the EIAR chapter. As part of this package of work he also provided collision modelling for notable ornithological species potentially impacted by the proposed development (e.g. raptors, waders and waterfowl). The results of the ornithological baseline and collision risk modelling were then included for further consideration in the impact assessment which assessed the baseline present within the site against the embedded mitigation measures proposed for the wind farm and provided recommendations for further mitigation measures required whereby impacts wouldn't be sufficiently mitigated by the embedded mitigation and enhancement proposals provided for the proposed development.

Natural England, Sutton and Hollesley Heaths SSSI, Suffolk - England – 2023

Ellis led a breeding bird survey as part of common standards monitoring updates to sites of specific scientific interest (SSSI) for Natural England with specific focus on nocturnal species which form qualifying features of the SSSI and also Sandlings Special Protection Area (SPA) such as nightjar and woodlark. The nocturnal surveys required understanding of nightjar/woodlark identification, vocalisations and capability of discerning territories of singing individuals in low light conditions. The results of the surveys informed detailed understanding of the current populations of the species within the SSSI and indications for potential management prescriptions required to maintain the populations of the qualifying species cited.

Euston Solar Farm Ltd., Norfolk - England – 2023

Ellis led multiple stone curlew surveys to inform the condition of potential breeding within the site of a proposed solar farm development within Euston, Essex. Stone curlew are breeding species within the UK with an estimated 400 pairs currently breeding, a species of particular conservation concern due to the conservation status in the UK, sensitivity to disturbance and association with arable farmland in Norfolk. The surveys required the use of night vision optics to be able to identify multiple stone curlew, discern patterns of behaviour and interpret breeding activity within the site for mitigation measures to be applied during construction activities in the surrounding area. Additional nesting bird checks were also undertaken during the day on the fields for nesting skylarks which required an observational survey for birds within one of the fields planned for ordnance survey. The check required the identification and location of nesting skylark, demarcating nest locations and enforcing a suitable buffer distance around the nesting sites.

Uniper Energy, Isle of Grain, Kent - England – 2023-2024

Ellis led multiple wintering wetland bird surveys along the Isle of Grain estuary as part of monitoring efforts of the site which forms an aspect of the Medway Estuary and Marshes SPA to inform an assessment of the non-breeding bird assemblage in connection with the potential impacts by a proposed carbon capture and storage plant development within the powerplant site located adjacent to the designated site.

Natural England - Folkestone to Etchinghill Escarpment SSSI, Kent - Orwell Estuary SSSI, Suffolk - Thames Estuary and Marshes SSSI, Kent - England – 2024-2025

Ellis led breeding bird surveys as part of common standards monitoring updates to sites of specific scientific interest (SSSI) for Natural England with specific focus on updating the CSM score of the Folkestone to Etchinghill SSSI with a particular focus on woodland and scrub breeding assemblage. Ellis also led a breeding bird survey as part of common standards monitoring updates for the Orwell Estuar SSSI with specific focus on the site's lowland open water breeding bird assemblage with particular focus on the avocet breeding population size which forms a qualifying feature of the SSSI. The results of the surveys at both sites informed detailed understanding of the current populations of the assemblage and species within the SSSI; potential pressures to the assemblages present; and assess the current management proposals to enhance the site for qualifying species (e.g. avocet) and both the woodland and scrub breeding bird species and open water breeding bird assemblages present respectively at the SSSI's. As part of the framework, further work was provided in 2025 to update the condition of the Thames Estuary and Marshes SSSI. Ellis led and assisted the project manager with arranging access, advising on suitable habitat for qualifying species (e.g. garganey, pintail, and liaising with landowners to ensure delivery of the project was successful. As a result, he led multiple surveys throughout 2025

Envireau Water, Solent & Southampton Water SPA and Ramsar site, Hampshire – England – 2024/25

Ellis led wintering wetland bird surveys as part of ongoing ornithological monitoring in relation to a wastewater discharge from a waste incineration facility along the foreshore at Southampton Water on the Solent Estuary within the Solent & Southampton Water SPA and Ramsar site designated for its qualifying features including wintering wetland bird assemblages of brent goose, wigeon, teal, ringed plover, black-tailed godwit and a significant open wetland bird assemblage. The work was undertaken to inform the potential impacts of potential impacts in connection with the discharge in relation to the overall assemblage present, species identified during the surveys and integrity of the Solent & Southampton Water SPA.

RWE Renewables UK Solar and Storage Ltd, Solar Farm, Essex – England – 2024/2025

Ellis project managed and led wintering bird surveys for a proposed solar farm in Essex, England on behalf of RWE. Surveys consisted of walked transects across a total of 15 different survey areas throughout farmland, hedgerows, woodland and rural towns. Due to the size of the proposed development, prior liaison with the client was required to organise access across a multitude of landowners to ensure surveys were undertaken in an organised and timely manner ensuring surveyor safety on site, reducing landowner conflict, confirming parking access and sufficient risk assessment. Surveys were completed in March 2025 with minimal issues and the report was submitted to the client for use as part of the planning application for the proposed development once taken forward for planning application.

[Prysmian, Prysmian Powerlink, Kent – England – 2025](#)

Ellis provided ornithological supervision support whilst drone surveys were undertaken within the Thames Water SPA in Kent, England. As part of his role, he supervised the photogrammetry and frequency location of a laid grid connection cable between England and Germany as part of the Prysmian Powerlink project. The work had the potential to disturb significant populations of qualifying species of importance to the SPA including redshank, grey plover and dunlin so ecological supervision was required for work to be undertaken during the winter season in 2025. He successfully guided the drone to the location for the work to be undertaken without significant disturbance to flocks of qualifying species avoiding potential disturbance impacts to a highly important site for migrating and wintering wader species.

[Gallileo Empower Ltd., Mynydd ty-Talwyn Energy Park, Port Talbot – Wales – 2025](#)

Ellis produced a collision risk modelling report and ornithological impact assessment as part of the submission for planning permission for a combined solar and wind farm development near Port-Talbot in Wales. As part of the assessment, additional appendices to the chapter were required whereby Ellis collated the data and reviewed the ornithological baseline present for priority species which included those listed on Birds of Conservation Concern Wales 4 Amber and Red List, Annex 1, Schedule 1 species of the Wildlife and Countryside Act 1981 and Section 7 of the Environment (Wales) Act 2021. Species of particular concern for further impact assessment included nightjar, goshawk and red kite. As part of the assessment he also used updated guidance for collision risk modelling provided by NatureScot in December 2024 to assess the potential collision mortality for target species identified in the assessment. Through the use of CRM and baseline data the project was successfully submitted for pre-application consultation with reserved matters application to follow.

George Wilkinson, Senior Consultant

Core skills

Ornithology

Providing technical leadership regarding the assessment of impacts on birds for varied development types, including:

Designing and leading field surveys

- Transect and Vantage Point surveys for breeding and wintering bird assemblages and specific species
- In farmland, woodland, heathland, wetland, coastal areas and offshore
- In the UK and overseas

Producing technical reports

Advising on potential constraints, mitigation and management options

Assessing impacts on internationally and nationally designated sites

Common Standards Monitoring

Collision Risk Modelling

General

Protected species surveys, guidance and technical reporting

Preliminary Ecological Appraisal

Ecological Impact Assessment

Details

Qualifications and certifications

BSc (Hons) Biology, University of Bristol (2016) – Upper Second Class

MSc SISS, University of Reading (2017) – Distinction

Great crested newt WML-CL08 licence

BOSIET & OGUUK Offshore Medical

Emergency First Aid at Work

Memberships

Full Member of CIEEM

Surrey Amphibian and Reptile Group

Relevant experience

Over seven years' consultancy experience on projects servicing various sectors in the UK and overseas

PROFILE

George joined RSK Biocensus in November 2021 following three years as an ecologist with AECOM. As a Senior Consultant specialising in ornithology, George takes a key role in identifying and addressing ornithological constraints to projects, providing technical leadership and guidance, designing survey methodologies, leading field surveys and producing reports.

Since 2019, George has been ornithology technical lead for a wide range of projects servicing the transport, energy, commercial and residential sectors. Clients have included CWP Global, EDF Renewables, ENI, Homes England, National Grid, National Highways, Natural England and UK Power Networks.

George is also Chair of RSK Biocensus's Ornithology Technical Excellence Group, through which he delivers training and provides specialist technical support.

George has technical skills in the following areas:

- Ornithology: notably surveys for wintering and breeding birds including specially protected species
- Initial field and desk-based assessment of baseline habitats and potential constraints to projects
- Detailed assessment of protected species constraints to projects, leading field surveys for various species
- Impact assessment (including collision risk modelling for wind farm projects)
- Preparation of high quality technical reports
- Collaboration with multidisciplinary project teams
- Health and safety awareness and compliance

In addition to his ornithological expertise, George has managed a range of ecology projects and has experience with various protected species including:

- Great crested newt (Level 1 survey licence holder)
- Reptiles (completed Surrey ARG's Rare Reptile Course)
- Water vole
- Badger
- Bats



Key project experience

RSK EXPERIENCE

Natural England SSSI Monitoring, Kent, 2025-Present

George is project manager and technical lead for ornithological monitoring of a large Site of Special Scientific Interest on the Kent coast. In this role he has designed, co-ordinated and led complex surveys and is currently producing a detailed Common Standards Monitoring Report including condition assessment, identification of pressures and management recommendations. Focal species include breeding bearded tit, marsh harrier, waders and waterfowl.

Solar Farms, Eastern England, 2023-Present

George has acted as ornithology technical lead for large proposed solar farms in Cambridgeshire, Essex and Suffolk. In this role he continues to design, co-ordinate and lead surveys for wintering and breeding birds, and provide technical support in identifying constraints and appropriate mitigation and enhancement measures. Species relevant to this work have included farmland birds such as corn bunting, golden plover, grey partridge, marsh harrier, tree sparrow, turtle dove and yellow wagtail.

Offshore Seabird Monitoring, UK, 2023-Present

George is project manager for work addressing nesting seabird constraints associated with proposed offshore platform decommissioning and alteration in the Irish Sea and the North Sea. In this capacity he has led boat-based seabird monitoring surveys, undertaken remote camera monitoring of nesting kittiwakes on platforms, and authored ornithological assessment reports and management strategies. This has included exploration of novel approaches for deterring seabirds from offshore platforms.

Wastewater Discharge, Hampshire, 2024-Present

George is ecology project manager for an incinerator effluent discharge into the Solent Estuary, leading a team in addressing potential constraints associated with sites designated for important ecological features including habitats, plants, invertebrates, and wintering and breeding birds.

Wind Farms, Southern Ireland, 2023-Present

George has been heavily involved in delivering ecological advice for multiple wind farm projects in southern Ireland, working within multi-disciplinary project teams to provide on-site guidance on survey methods and limitations and producing reports covering Environmental Impact Assessment and bird collision risk modelling. This work has involved assessment relating to internationally designated sites, and species including barn owl, golden plover, hen harrier, merlin, snipe and whooper swan.

Renewable Energy Development, West Africa, 2022-2024

George provided technical support for a large renewable energy development on the edge of the Sahara Desert, advising on ornithology survey design, identification of key features and initial assessment of potential impacts. This included leading over sixty vantage point surveys and producing associated technical reports discussing migrating raptors, waterbirds and songbirds.

Natural England SSSI Monitoring, East Anglia, 2024

George was project manager and technical lead for ornithological monitoring at two SSSIs in East Anglia. In this role he designed, co-ordinated and led complex surveys and provided technical advice relating to woodland, scrub, wetland and coastal habitats, with focal species including breeding avocet, bearded tit, marsh harrier, turtle dove and various waterfowl. George was lead author for technical reports assessing site condition and providing detailed management advice.

Electricity Interconnector, Kent, 2022-2024

George was project manager for the provision of ecological support during the installation of a new electricity interconnector in Kent, providing technical advice, leading surveys and producing reports covering varied ecological constraints including breeding birds, great crested newt and water vole. George led two years of ornithological monitoring to inform construction works, with relevant species including breeding Cetti's warbler, marsh harrier, nightingale, oystercatcher, pochard and ringed plover.

Solar Farm, East Anglia, 2023-2024

George provided technical advice and field support during the construction of a large solar farm, leading monitoring surveys and liaising with construction staff to avoid adverse effects on sensitive breeding bird species including curlew, goshawk, grey partridge, lapwing, skylark and stone-curlew.

Wind Farm, County Limerick, 2023-2024

George was heavily involved in producing Ecological Impact Assessment Reports and associated deliverables for a proposed wind farm development, working within a multi-disciplinary project team to assess the importance of ecological features, identify potential impacts and advise on appropriate mitigation and enhancement measures. This work focused on upland heath, bog, plantation and grassland habitats, with key species including hen harrier and red grouse.

Solar Farm, Buckinghamshire, 2023-2024

George was ornithology technical lead for a large proposed solar farm in arable land, designing, co-ordinating and leading surveys for wintering and breeding birds and providing technical support relating to priority species including golden plover, lapwing, yellow wagtail and yellowhammer.

Natural England SSSI Monitoring, East Anglia, 2023

George was project manager and technical lead for ornithological monitoring at two SSSIs in East Anglia. In this role he designed, co-ordinated and led surveys and provided technical advice relating to heathland and wetland habitats, with focal species including Dartford warbler, nightjar and woodlark.

Solar Farm, Kent, 2023

George was ornithology technical lead for a large proposed solar farm in arable habitat, designing, co-ordinating and leading surveys for breeding birds and producing the associated technical report, with relevant breeding species including corn bunting, linnet, quail, skylark and yellow wagtail.

Residential Development, Milton Keynes, 2022-2023

George was ornithology technical lead for a large multi-purpose development including proposed residential units near Leighton Buzzard, providing technical advice and leading wintering bird surveys for focal species including lapwing, skylark and snipe.

Commercial Development, Chichester, 2022-2023

George was ecology project manager and ornithology technical lead for commercial development proposals at holiday parks near Chichester, providing technical advice, leading field surveys and producing accompanying reports; particularly regarding potential constraints associated with wintering waterbirds and breeding waders including avocet, lapwing and oystercatcher.

Natural England SSSI Monitoring, Northamptonshire, 2022

George was ecology project manager and ornithology technical lead for bird monitoring surveys at a SSSI near Milton Keynes, leading field surveys, producing a technical report and providing advice relating to woodland and parkland supporting varied species including breeding owls and nightingale.

A120 Braintree to A12, Essex, 2021-2022

George was ornithology technical lead for a large transport project. In this role he was responsible for survey design, data management and quality assurance relating to wintering birds, breeding birds and barn owl. George led over fifty surveys in farmland and woodland habitats, recording notable breeding species including barn owl, grey partridge, little ringed plover, turtle dove and yellow wagtail.

Solar Farms, UK, 2022

George was ornithology technical lead for breeding bird surveys at three farmland sites proposed for new solar renewable developments. George designed survey methods, led field surveys, produced survey reports and provided technical advice relating to notable breeding birds including corn bunting.

Commercial Development, West Sussex, 2022

George provided technical advice on the potential for recreational fields proposed for redevelopment within an active holiday park to comprise functionally linked land to nearby internationally designated sites of ornithological interest (regarding the potential presence of wintering brent goose and waders).

Black Redstart Monitoring, London, 2022

George provided technical advice and undertook field monitoring of an active black redstart nest at a construction site near Kings Cross, establishing accurate breeding timelines and minimising construction delays whilst ensuring successful breeding by this specially protected species.

Residential Development, West Sussex, 2022

George led breeding bird surveys in grassland and woodland near Arundel, identifying potential ornithological constraints to development proposals including breeding bullfinch and nightingale.

Solar Farm, Mersey Estuary, 2022

George produced a wintering bird survey report to inform a proposed solar farm adjacent to the Mersey Estuary SPA and Ramsar site, evaluating the importance of waterbird populations recorded within the development footprint.

Power Station, Kent, 2021-2022

George was ornithology technical lead for breeding bird surveys at a power station to inform a proposed renewable energy development, providing input on survey design and leading field surveys, during which he identified notable breeding species including barn owl, hobby and nightingale.

PRE-RSK EXPERIENCE

A40 Improvements, Oxfordshire, 2020–2021

George was ornithology lead for two projects delivering improvements to the A40. He co-ordinated and led surveys for wintering birds and breeding birds, produced technical reports and liaised with county ornithologists. Relevant species included barn owl, Cetti's warbler, lapwing and yellow wagtail.

A27 Bypass, West Sussex, 2020-2021

George conducted ornithology surveys in varied habitats to inform a large road scheme, with relevant species including lapwing and Cetti's warbler. George assisted with survey design and led badger bait marking and reptile surveys.

Electricity Interconnector, Kent, 2019-2020

George was heavily involved in assessing ornithological constraints and providing mitigation recommendations for a new power cable and associated infrastructure within the Medway Estuary and Marshes SPA and Ramsar site. This work focused on wintering and breeding birds, including numerous field surveys, during which George recorded significant wintering populations of designated species. He also characterised baseline habitats and co-authored the EclA report.

Aylesbury Road Schemes, Buckinghamshire, 2019-2020

George was integral to a small team delivering ecology inputs for three road schemes. He led ornithology work, devising survey methodologies and leading wintering and breeding bird surveys and detailed surveys for breeding barn owl and kingfisher. George also led bat and reptile surveys.

Power Station Redevelopment, City of London, 2019-2020

George identified ecological constraints and enhancement opportunities for the redevelopment of a power station in Dagenham, leading field surveys and producing technical reports. Relevant species included black redstart, kestrel, linnet and peregrine.

Burgess Hill Northern Arc, West Sussex, 2018-2020

George advised on ecological constraints, mitigation measures and enhancement opportunities for a large multi-purpose development, leading various surveys and producing reports and BNG inputs.

Visual Impact Provision Project, New Forest, 2018-2019

George assisted with protected species surveys to inform the proposed burying of power lines and decommissioning of pylons in heathland habitat, identifying potential constraints including breeding nightjar, tree pipit and woodlark.

HRA, Various Clients, 2018-2021

George undertook Habitats Regulations Assessments for a range of plans and development proposals for organisations including local and regional authorities and water companies.

Other relevant experience

- 2022-2025 BTO Breeding Bird Survey participant
- Shadowing on seabird field research on the Scilly Isles with the University of Exeter in June 2025
- Completed Surrey Amphibian and Reptile Group's Rare Reptile Course in 2024
- 2019-2020 Amphibian and Reptile Conservation Trust accredited agent to survey natterjack toad
- October-November 2017 African Bat Conservation volunteer field assistant, Malawi
- Over seventeen years' experience watching and photographing wildlife in the UK and overseas (including Europe, North and Central America, Africa and Asia)

Nick Henson, Associate Director

Core skills

Project and team management
Stakeholder management
Ecological impact assessment
Environmental Impact Assessment
Habitats Regulations Assessment
Nationally Significant Infrastructure Projects
Renewable Energy
Survey design and scoping
Report writing
Ecological mitigation and compensation strategies
Biodiversity offsetting
Ecological Clerk of Works
Technical expertise in Ornithology
Biodiversity Net Gain and biometrics

Details

Qualifications

Master of Environmental Sciences (MEnvSci) (2005) (First Class honours)

Memberships

Chartered Environmentalist (CEnv)
Full Member of the Chartered Institute of Ecology and Environmental Management (MCIEEM)

Relevant experience

Over 19 years ecological consultancy experience working on a range of public and private sector projects.

PROFILE

Nick joined RSK Biocensus in March 2021 and has more than 19 years' experience in ecological consultancy. As an associate director, Nick takes a key role in projects, providing technical leadership and overview, managing the delivery of specialised components, and advising on the most effective team and approach. Recent high-profile projects have included HS2 (Phase 1 Central), Lower Thames Crossing (Highways England) and North West Coast Connections (National Grid).

Nick has extensive experience in ecological aspects of Nationally Significant Infrastructure Projects. He has managed, coordinated and authored the ecological inputs of many environmental and planning deliverables and is well-versed in report writing. This includes providing the specialist ecological inputs to Preliminary Ecological Appraisals, Environmental Impact Assessments (EIA) and Habitats Regulations Assessments (HRA).

Nick has specialist technical skills in the following areas:

- considerable experience in protected species, particularly in determining the impacts of large schemes on biodiversity and designing appropriate mitigation
- technical expertise in ornithology and assessing the impacts of schemes on birds
- quantitative collision risk modelling to assess the impacts of wind farm schemes on birds
- broad knowledge of legislation and best practice specifically in relation to protected species
- design and implementation of ecological mitigation and compensation measures in relation to infrastructure and development projects
- provision of clear and professional ecological advice
- preparation of ecological impact assessments
- client and stakeholder engagement including presenting at public exhibitions
- effective collaboration within multidisciplinary project teams

Key project experience

Calderdale Windfarm Limited, Calderdale Energy Park, 2024-Ongoing

Nick is currently the technical lead for the ornithology inputs for the planning stage of a proposed 41 turbine wind farm Development Consent Order (DCO) in Yorkshire. As part of his role, Nick is overseeing the completion of a comprehensive suite of baseline ornithology surveys, inputting to statutory and non-statutory stakeholder engagement events, managing the production of the ornithology chapters of the Environmental Impact Assessment, Habitats Regulations Assessment and other associated DCO documents and is devising a complex package of mitigation and compensation measures for this Nationally Significant Infrastructure Project. He is also responsible for the quality assurance and health and safety aspects of the project, providing technical oversight for the project team and being responsible for client engagement, project resourcing and technical reviews.

Greensource, Ballyclough Wind Farm, 2023-Ongoing

Nick is currently the technical lead for the ecology and ornithology inputs for the planning stage of a proposed 11 turbine wind farm in County Limerick, Ireland. As part of his role, Nick is managing the production of the biodiversity and ornithology chapters of the Environmental Impact Assessment Report and associated appendices, including detailed Collision Risk Modelling and the production of a Habitat and Species Management Plan. He is also leading the completion of a suite of bird vantage point and transect surveys across the site and the surrounding hinterland area, being responsible for survey design and scoping and quality assurance. Nick is providing technical oversight for the project, being responsible for client engagement, project resourcing and technical reviews.

Natural England, SSSI Monitoring, East Anglia, 2023-Ongoing

Nick is project director for bird monitoring surveys at two Sites of Special Scientific Interest (SSSI). In this role he has provided technical advice relating to heathland and wetland habitats, with focal species including breeding Dartford warbler, gadwall, nightjar and woodlark. He is responsible for the technical review and quality assurance of the project deliverables, which are to inform ongoing Common Standards Monitoring by Natural England across the SSSI network.

Ventient Energy, Various wind farm repowering schemes, 2023-Ongoing

Nick is the lead ornithologist and ecological advisor to Ventient Energy for various wind farm repowering schemes including Ardrossan Wind Farm, Glenkerie Wind Farm, Beinn Ghlas Wind Farm and Causeymire Wind Farm. Nick has inputted to and technically reviewed the associated Ecological Impact Assessment reports for these schemes as well as led client and stakeholder discussions regarding the scope and findings of the assessments, which helped lead to the successful approval for several of the schemes to date.

SPR, Harestanes West Wind Farm EIA in southern Scotland, 2023-ongoing

RSK was commissioned to undertake ecological surveys in relation to a proposed wind farm in Southern Scotland. Works to date include a Phase 1 habitat survey and national vegetation classification (NVC) survey as well as protected species surveys. Nick is the project director for the ecological and ornithological elements which involves overseeing the management of subconsultants

undertaking the surveys and reporting, as well as attending design meetings, managing the finances of the project and working closely with the wider project team. Nick will also be responsible for technically reviewing the ecology and ornithology chapters of the EIA.

[Greensource, Ballynisky Wind Farm, 2023-Ongoing](#)

RSK Biocensus were commissioned by Greensource to produce the ornithology Environmental Impact Assessment Report and associated appendices, including detailed Collision Risk Modelling and baseline reporting, to inform the planning application for a six-turbine wind farm development in County Limerick in Ireland. Nick is the lead ornithology specialist for the project, providing technical guidance to the client and project team, and being responsible for quality assurance and technical reviews, client engagement and commercial management.

[Greensource, Tullacondra Wind Farm, 2022-2025](#)

Nick was the technical lead for the ecology and ornithology inputs for the planning stage of a proposed nine-turbine wind farm in County Cork, Ireland. As part of his role, Nick managed the production of the biodiversity and ornithology chapters of the Environmental Impact Assessment Report and associated appendices, including detailed Collision Risk Modelling and the production of a Habitat and Species Management Plan. Nick has provided technical oversight for the project, being responsible for client engagement, stakeholder engagement, project resourcing and quality assurance.

[Cove, Medmerry Holiday Park, West Sussex, 2023-2024](#)

Nick was the ecological project director for the proposed re-development of the Medmerry Holiday Park in West Sussex. As part of his role, Nick was responsible for planning and delivering all ecological and ornithological surveys for a range of receptors including reptiles, breeding and wintering birds, great crested newts, water voles, badgers, bats, plants and habitats. He was also responsible for the production of the Ecological Impact Assessment, Biodiversity Net Gain Assessment, and Habitats Regulations Assessment. He developed pragmatic strategies to avoid, mitigate, and enhance the site for the benefit of sensitive ecological receptors, including bird species designated as qualifying features of neighbouring internationally important sites.

[Costain, A12 Chelmsford to A120 Widening Scheme, 2022-2024](#)

RSK Biocensus worked alongside Costain to provide a suite of pre-construction ecology and ornithology surveys for informing National Highway's proposed A12 widening scheme. Nick was the project director responsible for leading the team that managed the surveys. This included having commercial and technical oversight of the project, being responsible for the health and safety of the team, client engagement, project resourcing and quality assurance.

[National Grid, Little Horsted, 2021–Ongoing](#)

RSK Biocensus was commissioned by National Grid to provide ecological services in relation to the proposed development of a new substation and associated infrastructure, including new connecting pylons in Uckfield, East Sussex. Nick is providing a supporting role to the project team as an ecological technical specialist. This includes engaging with National Grid during regular project and

design meetings, ensuring the highest ecological standards are upheld and opportunities for biodiversity are maximised, without compromising project programme or budgets. The project has successfully gained planning consent and is aiming to deliver a net gain for biodiversity, through its integrated design and mitigation strategy.

National Highways, A120 Braintree to A12, 2021-2022

RSK Biocensus worked alongside Arup and Atkins to provide a suite of ecology surveys for informing National Highway's proposed A120 improvements scheme. Nick was the project director responsible for leading the team that coordinated, implemented and managed the ecology surveys. This included having commercial and technical oversight of the project, being responsible for the health and safety of the team, client engagement, project resourcing and quality assurance.

Uniper Energy, Grain Carbon Capture and Storage, 2021-Ongoing

Uniper are currently developing a proposal for the construction of a new Carbon Capture and Storage facility within the footprint of a former oil power station on the Isle of Grain in Kent, which lies adjacent to several sites that are designated as being of European importance for biodiversity, particularly birds. RSK Biocensus have been commissioned to undertake a suite of surveys to inform an impact assessment, as well as identify any mitigation, enhancement and biodiversity net gain opportunities. Nick is the ecological project director and technical lead for the project, and assisted with the completion of the bird and other species surveys to inform the project.

PRE-RSK EXPERIENCE

Eiffage-Kier, HS2 (Phase 1), 2017–2021

Between August 2017 and February 2021, Nick was the ecological technical lead for the design joint venture working on behalf of HS2's main works civils contractor between South Heath in Buckinghamshire and Southam in Warwickshire. As part of his role, Nick was responsible for providing ecological advice during the development of the project's scheme design and detailed design phases. He inputted to the design of complex ecological mitigation and compensation strategies, assessed ecological impacts and guided design optioneering. His work included extensive stakeholder engagement, working effectively as part of a large multi-disciplinary integrated project team and identifying opportunities to optimise the project's design solutions.

Highways England, Lower Thames Crossing, 2019–2021

Nick was the lead author for the ecological inputs to Highways England's Lower Thames Crossing Development Consent Order. He managed an extensive team of ecological specialists to gather detailed ecological baseline information that was used to inform the project's design, EIA inputs and ecological mitigation, compensation and management proposals.

National Grid, North West Coast Connections, 2015-2017

Nick was the ecological technical lead for National Grid's North West Coast Connections project between January 2015 and September 2017. This Nationally Significant Infrastructure Project comprised a proposed new electricity transmission connection in Cumbria and Lancashire, including a tunnel under Morecambe Bay, approximately 140km of new overhead power lines, and sections of

underground cable within the Lake District National Park. As part of his role, Nick was responsible for managing a large team of ecologists and ornithologists, who undertook a full suite of baseline surveys. He also produced the ecological chapters of the project's Scoping Report, Preliminary Environmental Information Report, Environmental Statement, HRA reports and biodiversity mitigation strategies. Nick was also the ecology specialist at options appraisal workshops and stakeholder consultation events, including public exhibitions.

[National Grid, Feeder 9 gas pipeline, 2013-2015](#)

Nick was the technical reviewer for the ecology and ornithology inputs to National Grid's Feeder 9 Development Consent Order submission, for a proposed gas pipeline under the River Humber. This focussed on overseeing and contributing to the assessment on how the project could affect important ecological features, including internationally important assemblages of birds and other species associated with the Humber Estuary Ramsar site, Special Area of Conservation and Special Protection Area. As part of his role, Nick provided specialist support to the ecological expert witness at the examination hearing.

[Lightsource, Various Solar Farm projects, 2012-2014](#)

Nick was the lead ecologist for the assessments of multiple solar developments across the UK for Lightsource. As part of this role, Nick managed and coordinated survey teams as well as the production of EclA reports to meet tight project timescales.

[Infinis, Various Wind Farm projects, 2012-2014](#)

Nick was responsible for managing the ecological aspects of four wind farm EIAs for Infinis. These sites were all located within upland areas in south Wales and comprised up to six large wind turbines each. Nick was responsible for coordinating and undertaking a suite of ecology and ornithology surveys including monitoring flight activity of targeted bird species for the purpose of informing quantitative collision risk modelling. It also included targeted surveys for breeding barn owls and honey buzzard, as well as nocturnal surveys for species such as long-eared owl, golden plover and nightjar. Nick was responsible for producing the ecology and ornithology inputs to the ES chapters for each project as well as leading various stakeholder consultation events.

[Enfinity UK Limited, Red House Wind Farm, 2010-2013](#)

Nick managed the ecological aspects of an EIA of a proposed wind farm within an area of farmland to the east of Doncaster. He was responsible for coordinating and undertaking a suite of protected species surveys for bats, badgers, water voles and great crested newts, as well as monitoring flight activity of targeted bird species for the purpose of collision risk modelling. He led the production of the associated baseline reports, Scoping Report inputs, Environmental Statement chapters for ecology and ornithology and a Habitats Regulations Assessment report.

[Electrawinds NV, Stribers Wind Farm, 2008-2012](#)

Nick was responsible for the coordination of the ornithological aspects of this proposed wind farm within an area of upland habitat in northern England. This included regular liaison with the client and consultation with relevant statutory and non-statutory stakeholders. He also produced the ornithology aspects of the EIA including chapters for the Scoping Report and Environmental Statement.

Scottish Power Renewables, Dyfnant Forest Wind Farm, 2008-2013

Nick was responsible for undertaking bird surveys at this large-scale proposed wind farm site over a two-year period. This included vantage point surveys, wintering and breeding bird transect surveys and targeted surveys for raptors. He also undertook detailed monitoring of nightjars using specialist radio-tracking equipment as well as targeted surveys for water voles and white-clawed crayfish. In 2012, Nick was employed as the lead ecologist/ornithologist for the EIA and was responsible for writing the ecology and ornithology chapters of the Environmental Statement. Following the publication of the draft Environmental Statement, Nick attended Community Liaison Meetings and Public Exhibitions as the ecology/ornithology specialist for the project.

SHANE CARR

Shane has been selected for the proposed project because of his experience with regard to noise, air quality and project management



Shane has over 21 years' experience working in both the Public and Private sectors, with particular expertise in the areas of environmental noise, modelling as well as staff and project management. He has worked in the Environmental Health departments of various local authorities in Northern Ireland and the UK in an enforcement capacity.

Shane has been working as a consultant since 2007, joining Marshall Day in 2010 and subsequently becoming a Director in Irwin Carr in 2016. In this time, he has carried out noise modelling projects throughout Ireland and the UK.

Shane has a broad range of experience in all aspects of noise including environmental noise assessment and control. He has presented expert evidence on a number of occasions for a range of planning issues and environmental noise assessments.

Qualifications

- BSc(Hons) Degree in Environmental Health
- Post-Graduate Diploma in Acoustics
- Member of the Institute of Acoustics
- Chartered Member of the Chartered Institute of Environmental Health

Employment History / Experience

Public Sector

Since I qualified as an Environmental Health Officer (EHO) in 1999 until August 2007 I worked within a number of different Councils both within N.Ireland and London. During this time I primarily worked within the Environmental Protection aspects of the Councils services and I assessed numerous Air Quality Assessments, PPC/IPPC applications and planning applications within each Council area.

For the majority of my time working in the public sector, I was employed by Westminster City Council. I was initially employed as an EHO within the technical section of the Noise Team.

After my first two years with the Council I was given management responsibility for a team of 4 EHO's within the EH Consultation Team. In anticipation of the Licensing Act 2003 coming into effect, this responsibility increased. I was responsible for assessing the risks to Council, particularly Environmental Health of the requirements of the new legislation and ensuring that suitable procedures and personnel were in place to deal with the anticipated alterations in demand, resulting in a team of 16 being in place for which I had direct line management.

I was responsible for the recruitment and selection of all personnel within my team as well as the overall management of the wider section of up to forty people for the duration of the transition period for the Licensing Act.

The EH Consultation team, which I managed were designated as the Responsible Authority for the Health and Safety Authority (where appropriate) and the Authority for minimising the risk of pollution, thus they are primarily concerned with the prevention of Public Nuisance and Public Safety licensing objectives.

I was responsible for presenting the evidence in relation to the various applications to the Council hearings or in the Magistrates Court. This role brought me into direct contact with Councillors and senior Council staff as well as developing a working relationship with numerous solicitors and barristers. It significantly improved my expert witness skills; ensuring I presented appropriate information in a suitable manner.

A brief outline of my wider duties included:

- management of a multi-disciplinary team
- carrying out technical noise reports
- acting as an expert witness on behalf of the council in court and in planning inquiries regarding noise and licensing matters
- leading on the development of the Councils Unitary Development Plan (UDP) in relation to noise and air quality
- carrying out noise mapping within the Council area using the LIMA software
- noise aspects of the special events within the Council area including concerts in Hyde Park and Notting Hill Carnival
- Drawing up service level agreements between EH and other Council Departments

Until I left London in 2006 I represented the Chartered Institute of Environmental Health (CIEH) on the Health and Safety Executives (HSE) working group to provide approved guidance to the entertainment industry on compliance with the Noise at Work Regulation.

Private Sector

From August 2007 to 2010, I managed the Air Quality and Noise sections of WYG in Belfast. I was responsible for the direct line management of the staff within my section in Belfast, as well as being responsible for staff at various offices throughout Ireland on a project by project basis. I was responsible for ensuring that monthly financial targets are met and reporting on an ongoing basis to my Director.

I prepared all initial quotes, deal directly with potential clients, agree contracts, ensure resources are available to deliver an appropriate assessment and am responsible for signing off all reports issued from the Belfast office in relation to Air Quality and Noise. All of the sections I was responsible for in WYG continually overachieved in relation to their financial targets. This showed me the importance of the financial management of specific projects and I am fully aware of the importance of maximising efficiencies while still providing a quality service, as many of the clients using my sections are repeat clients. This has allowed me to build up a strong working relationship to the benefit of both parties.

In 2010 I became a Director in Marshall Day Acoustics Ireland, which subsequently became Irwin Carr Consulting (in 2016). I am currently the Managing Director of the company with primary responsibility for the Environmental Noise and Air Quality aspects of the business.

Air Quality Experience

I have extensive experience of carrying out assessments in line with the Local Air Quality Management legislation and for this purpose I have prepared numerous assessments using the DMRB screening methods as well as ADMS Air Quality modelling software for schemes which have a significant transport impact.

As well as significant experience of practical onsite dust and odour monitoring, I am highly skilled in the use of the AERMOD software and have submitted numerous assessments in relation to odour from waste water treatment works and PPC regulated activities as well as assessing the impact of numerous industrial sources and renewable energy sources such as CHP and biogas units on the appropriate air quality standards.

Noise Experience

I have significant experience of both environmental noise assessments and the acoustic assessment of buildings. I have carried Noise assessment for various windfarm developments schemes throughout Ireland in line with the ETSU standard, been responsible for designing the assessment schemes to assess the noise impact for major road redevelopments within Ireland as well as assessing the suitability of proposed sites for residential or commercial/industrial development.

I am currently responsible for the distribution of the *SoundPLAN* noise modelling software for predicting environmental noise throughout the island of Ireland.

I have contributed to numerous EIA in relation to significant developments in both Northern Ireland and the Republic of Ireland and where the Air Quality or Noise element of assessment is deemed key. I have been responsible for co-ordinating and preparation of the assessment for submission to the appropriate authority. This has included significant renewable energy schemes.

Summary

- I have presented evidence at numerous planning, licensing and court hearing on the issues of nuisance, residential amenity and compliance with guidance.
- I was the primary consultant in preparing the Significance of Noise in Relation to Onshore Wind Farms on behalf of the Sustainable Energy Authority of Ireland (SEAI) which was carried out to provide the technical update of the guidance on noise in the Irish Wind Energy Development Guidelines 2006.
- I have recently provided technical guidance to the Department of Housing, Planning and Local Government in relation to the noise review of the Wind Energy Development Guidelines
- Shane has carried out a number of presentations to the renewable energy sector, the CIEH as well as providing presentations to the University of Ulster in relation to noise as part of the Environmental Health course.

I have always tried to deliver a quality product to meet the needs of the client, be they members of the public accessing Council services or clients of the private sector consultancy. I feel my time in both public and private sector has given me a clear understanding of the needs of customers to each sector.

I have significant experience successfully managing and leading teams through challenging times with ambitious targets to meet I have worked on numerous environmental assessments throughout the UK and all of Ireland. I feel I have the appropriate technical skills coupled with management experience and commercial skills to meet the requirements of this job.

MARK BURKE

Mark has been selected for the proposed project because of his experience with regard to wind farm noise



Mark has over 5 years' experience working in both the Public and Private sectors, with particular expertise in the areas of environmental noise and noise modelling. He has worked in the Environmental Health departments of various local authorities in Northern Ireland in an enforcement capacity.

Mark has been working as a consultant since 2022. In this time, he has carried out noise assessment and modelling projects throughout Ireland and the UK.

Mark has experience in all aspects of noise including environmental noise assessment and control.

Qualifications

- BSc(Hons) Degree in Environmental Health

Experience

I have experience of environmental noise assessments, having carried out Noise assessment for various windfarm development schemes throughout Ireland in line with the ETSU standard.

I have contributed to numerous EIAs in relation to significant developments in the Republic of Ireland and where the Air Quality or Noise element of assessment is deemed key. This has included significant renewable energy schemes.

Wind Farms | Consultant | 2022-present

Mark is primarily responsible for environmental noise assessment within Ireland, in the past year he has undertaken planning and or compliance testing of numerous wind farms throughout Ireland.



CURRICULUM VITAE

RICHARD BARKER

DIVISIONAL DIRECTOR - LANDSCAPE ARCHITECT

MLA, BA ENV, PG DIP FOR, MILI

PERSONAL PROFILE

Richard formerly worked as a Town Planner in New Zealand, London and Dublin before moving into the field of Landscape Architecture. He has spent the last 20 years working as a Landscape Architect in Ireland and has considerable experience in the fields of both Landscape and Visual Impact Assessment (LVIA) and landscape design, covering all stages from project feasibility through to construction. This cross-over of expertise is invaluable in determining and designing the most appropriate and effective form of landscape and visual mitigation for infrastructural development projects. Richard is the Divisional Director in Macro Works (part of APEM Group), a specialist LVIA consultancy that undertakes assessments for a broad spectrum of projects from wind and solar energy, to roads and large scale industrial and infrastructural development. Richard has personally completed the landscape and visual assessment of over 150 wind farms and a similar number of solar farms as well as numerous other commercial and infrastructural projects including more than a dozen SID projects. Consequently, he has considerable oral hearing training and expert witness experience. Richard has presented several conference papers relating to sustainable landscape design and LVIA as well as delivering the inaugural workshop on the landscape and visual effects of wind energy developments on behalf of the Irish Wind Energy Association. He has also delivered guest lectures / Webinars to the University College Dublin professional course in EIA Management and the Irish Landscape Institute in relation to LVIA.

EDUCATIONAL AND PROFESSIONAL STATUS

- MLA, Lincoln University (2003).
- PG Diploma, Forestry, Canterbury University (1996).
- BA, Environmental Science, Massey University (1995).

EMPLOYMENT HISTORY

- 1998 – 1999 Marlborough District Council (NZ) – Resource Planner
- 1999 – 2000 The Environment Agency (UK) – Planning Liaison Officer
- 2000 – 2001 Harrow Borough Council – Town Planner
- 2001 – 2002 CAAS Environmental (Dublin) - Planner
- 2004 – 2008 Tiros Environmental (Dublin) – Landscape Architect
- 2008 – 2014 MosArt (Wicklow) - Senior Landscape Architect / Associate Director
- 2014 – 2024 Macro Works (Dublin) – Managing Director / Divisional Director

FURTHER EXPERIENCE

- Corporate Member of the Irish Landscape Institute

SELECTED RECENT PROJECT EXAMPLES

150+ Wind Energy Projects (10 SID), various private and semi-state developers. Feasibility, LVIA and oral hearings.

150+ Solar Energy Projects, various developers. Feasibility, LVIA, Glint and Glare Assessments.

Celtic Interconnector, Mott McDonald. LVIA for strategic undersea and terrestrial electrical cable between France and Ireland.

St Kevin's Hospital SHD, Land Development Agency. LVIA with associated Photomontages / CGIs for a Strategic Housing Development incorporating the restoration of a landmark heritage building in Cork City.

Greater Dublin Drainage Scheme, Irish Water. MCA analysis of site options then LVIA for a 20ha sewage treatment facility, pipeline routes, pumping stations, plus oral hearing.

Water Supply Project Midlands and Eastern Region, Irish Water. MCA analysis of abstraction options and pipeline routes and LVIA of selected option.

College Green Plaza, ARUP / Dublin City Co. Full LVIA for proposed pedestrian plaza in Dublin's City Centre at College Green.

South Kerry Greenway, Fehily Timoney / Kerry CoCo. LVIA and oral hearing for a Cycleway along former railway line, plus oral hearing.

Rossaveel Deep Water Pier, Rossaveel Port Co. SLVIA for new port-based coastal infrastructure in a high sensitivity landscape / seascape environment.

Bryn Cefni Biomass Plant, Ecopellets. LVIA for a large biomass facility in Llangefni, Wales plus planning enquiry.

N59 Moycullen Bypass Road Project, NRDO. Route options appraisal and LVIA for selected route plus oral hearing.

N59 Clifden to Maam Cross Road Project, NRDO. Route options appraisal and LVIA for selected route plus oral hearing.



CURRICULUM VITAE

CIAN DOUGHAN

ASSOCIATE DIRECTOR - LANDSCAPE ARCHITECT

BSC LANDSCAPE ARCHITECTURE

MILI

PERSONAL PROFILE

Cian is an honours graduate of Landscape Architecture from UCD and is from Dublin, Ireland. He has exceptional graphic ability and his main field of interest in landscape Architecture is that of landscape planning and in particular, Landscape and Visual Impact Assessment. Cian has worked on important water supply projects as well as a range of SID wind farm developments and over 80 solar farm applications. Recent work that he has been involved with includes Scart Mountain, Cloghercor and Ballinagree SID Wind Farms, numerous large scale solar developments, linear infrastructure such as Greenways and Road developments, feasibility assessments for various on-shore wind farm developments in addition to the Draft Landscape Design Guidelines for Irish Water.

EDUCATIONAL AND PROFESSIONAL STATUS

- BSc, Landscape Architecture, University College Dublin (UCD).
- MILI – Member of the Irish Landscape Institute

EMPLOYMENT HISTORY

- 2023 to present – Associate Director, Landscape Architect, Macro Works Ltd
- 2016 to 2023 – Landscape Architect, Macro Works Ltd
- 2017 – 2018 – Landscape Architect, Hollander Design New York

SELECTED RECENT PROJECT EXAMPLES

Scart Mountain SID Wind Farm, Empower (2024). An SID Wind Farm development comprising 15 no. turbines rising to a maximum height of up to 185m located along the eastern foothills of the Knockmealdown Mountains in County Waterford.

Dyrick Hill SID Wind Farm, Empower (2023). An SID Wind Farm development comprising 12 no. turbines rising to a maximum height of 185m located along the Knockmealdown Mountains foothills in County Waterford.

Cloghercor SID Wind Farm, Orsted/FEI (2023). An SID Wind Farm development comprising 19 no. turbines rising to a maximum height of 200m in County Donegal.

Ballinagree SID Wind Farm, Orsted/FEI (2022). An SID Wind Farm development comprising 20 no. turbines rising to a maximum height of 185m located in the Boggeragh Mountains in County Cork.

Rathcoursey Solar Farm, Terra Solar (2023). A 126ha solar farm development comprising 5 parcels and served by a new 110kV substation, located along rolling agricultural lands in northeast Cork, north of Cork Harbour.

St. Kevins Hospital SHD, Land Development Agency (2021). A residential development on a 5.7 ha site on lands located 2.5km west of Cork City Centre on a prominent south-facing hillside site, the former St. Kevin's Hospital and grounds, Shanakiel, Cork.

100+ Solar Energy Projects, various developers. Feasibility, LVIA, Landscape Strategies, Glint and Glare Assessments, Further Information Requests and Appeal responses.

30+ Wind Energy Projects, various private and semi-state developers. Feasibility, Design Optimisation, LVIA, Further Information Requests and Appeal Responses.



CURRICULUM VITAE

AMY DORAN

GRAPHIC SPECIALIST, HEALTH AND SAFETY OFFICER

BA

PERSONAL PROFILE

With over 8 years of experience, Amy is Macro Works' Lead Graphic Specialist and is principally involved in the preparation of photomontages for landscape and visual impact assessments. This role involves working with 3D terrain models and the subsequent integration of photorealistic 3D renders into the calibrated site photography. Amy also has a host of health and safety qualifications and is Macro Works Health and Safety Officer.

EDUCATIONAL AND PROFESSIONAL STATUS

- Graphics for 600+ projects (national and international) via Macro Works
- General Data Protection Regulation, Kallidus (2023)
- Cyber Security and Phishing, Kallidus (2023)
- Photoshop Actions and Plugins: Automation, Udemy (2023)
- InDesign 2022 MasterClass, Udemy (2022)
- Safety Ireland First Response F.E.T.A.C. Lv 5. Occupational First Aid (2022).
- Fire Safety Training (2018).
- BA (First Class Hons), 3D Design, Model Making and Digital Art, I.A.D.T (2016)
- Solas Safe Pass Course (2014)

EMPLOYMENT HISTORY

- 2016 to 2024– Graphics Specialist, Macro Works Ltd.

FURTHER EXPERIENCE

- 2015 – 3D Modeller, IADT/UCD
- 2015 – Model Maker, The Workhouse
- 2014 – Trainee Stone Mason (Restoration), Irish National Heritage Park, Castleboro House

SELECTED RECENT PROJECT EXAMPLES

- **150+ Wind Farms, various private and semi-state developers.** (inc Offshore, Onshore, Single Turbines, Feasibilities, Extensions and Repowering)
 - **150+ Solar Farms, various private and semi-state developers** (inc. Extensions)
 - **110+ Grid Infrastructure Projects, various private and semi-state developers** (inc. BESS, Substations, Electrical Infrastructure, Biomass, OCGT, etc.)
 - **180+ Projects, various private and semi-state developers** (Housing, Factory, Road, Greenway, Quarry)
 - **Water Supply Project Midlands and Eastern Region, Irish Water.**
 - **Oweninny Wind Farm Phase 3.** Wind Farm Development in the Bellacorrick Basin, Co. Mayo, Ireland
 - **Mayo Green Hydrogen Production Plant.** Development in the Bellacorrick Basin, Co. Mayo, Ireland
 - **Torremendo Solar Farm.** Solar Farm Development near the village of Torremendo, Spain
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CURRICULUM VITAE

LUIS DOMINGUEZ

GIS ANALYST

MSC, BSC



PERSONAL PROFILE

As GIS Analyst at Macro Works, Luis' job is to manage all spatial data in order to study the effects of new developments in the landscape. This involves drone and other field data collection and processing, viewshed map creation and photomontage editing. Luis came to Macro Works from a range of positions in which he was responsible for managing complex GIS datasets within the health sector, the education sector and also in relation to archaeological research projects. His current role see him dealing with infrastructure and energy projects, particularly solar farms, and wind farms.

EDUCATIONAL AND PROFESSIONAL STATUS

- MSc, Territorial and Local Development Planning and Management. Universidad de Sevilla. 2011
- MSc, GIS & Remote Sensing. Universidad de Extremadura. 2010
- BSc, Geography. Universidad de Granada. 2009

EMPLOYMENT HISTORY

- 2016 to 2023 - GIS Specialist, MacroWorks
- 2013 to 2015 – Mapper and GIS Analyst in Local Asset Mapping Project, St. James's Hospital
- 2010 to 2011 – GIS Technician, Estudios Técnicos y Jurídicos Llamas S.L.

FURTHER EXPERIENCE

- 2015 - GIS Specialist – The Discovery Program
- 2013 - Research Assistant, NUI Maynooth
- 2011 - Scholar Cooperating in Environmental Project - Oficina de Cooperación de la Universidad de Sevilla

SELECTED RECENT PROJECT EXAMPLES

NISA Offshore Wind Farm, ARUP (2021-2023). Visibility analysis and preparation of visuals and mapping on the feasibility and LVIA stages of the different turbine iterations and the proposed array.

Clova Wind Farm (Scotland), The James Truscott Consultancy (2023). Visibility analysis, data compilation and preparation of maps and wireline montages from selected locations for a feasibility study.

A&M Fife, St. Andrews, Scotland (2024). Visibility analysis, data compilation and preparation of maps and wireline montages from selected locations for a Landscape & Visual Impact Assessment for a golf course development.

CURRICULUM VITAE

COLIN MCCAFFREY

SPECIALIST IN 3D MODELLING AND PRESENTATION

BARCH SC



PERSONAL PROFILE

Colin has worked with Macro Works since 2005 and has been personally involved with all of our projects across our diverse portfolio since then. He specialises in the output of finished renders of complex architectural, industrial and civic infrastructural models to precisely match site-captured imagery. He has worked closely with the graphics team in the development of complex depth of view rendering and serves the unique panoramic formats frequently used by Macro Works. Prior to working for Macro Works, Colin completed a number of high-profile projects for the National Building Agency and was also a CAD lecturer at both Griffith College and Dun Laoghaire College of Further Education.

EDUCATIONAL AND PROFESSIONAL STATUS

- Architectural Diploma. D.I.T. Bolton Street, Dublin 1
- Degree BArch Sc (hons), Dublin Institute of Technology, Bolton Street, Dublin 1.

EMPLOYMENT HISTORY

- 1998-1998- ACAD Draughtsman, Physical Model Making, Surveying. Stafford & Glynn Architects, El Segundo, Los Angeles.
- 1999 to 2001-Asistant Architect (Design, Working Drawings, surveying, 3D Modelling), National Building Agency Richmond Ave. South, Milltown Dublin 6.
- 2000 to 2001-ACAD lecturer in Interior Design and Interior Architecture Courses, Grifith College, Dublin.
- 2003 to 2008 – Part-time lecturer in ACAD and Autodesk Viz/3Ds Max Design, ECDL CAD qualified Teacher/Examiner. Dun Laoghaire College of Further Education.
- 2002 to 2023 Self Employed 3D modelling contractor. Clients include the National Building Agency, Macro Works, The Building Consultancy, Crean Salley Architects.
- 2023 September-Macro Works/APEM Senior 3D Modeller.

SELECTED RECENT PROJECT EXAMPLES

Profile Park 110Kv Substation- Tobin (2021). Model array of power generation structures, tanks and stacks.

Poolbeg Flexgen & BESS- Mott MacDonald (2022). Model Open Cycle Gas Turbine structures & BESS compound.

Celtic Interconnector- Mott MacDonald (2021). 220kV Substation, 400kV AIS Bay

Project Central Sandyford- Reddy Architecture (2020). Multiple phase mixed use development including school, institutional building and office buildings surrounding landscaped spaces.

UCD Newman Building- Reddy Architecture (2021). Extension of Newman block for UCD Campus.

College Green Pedestrianisation- Dublin City Council (2017). Hard landscaping of pedestrianised layout proposal

NISA Off-Shore wind farm- ARUP (2020). Multiple layout options and various turbine specifications modelled.

Oweninny III Wind Farm- Board Na Mona (2020). On-Shore wind farm development and comparative study

Castlebanny Wind Farm- Coillte. (2020). On-Shore wind farm development & Comparative Study

Rosspile Solar and Substation- Highfield Energy (2018). Large Solar farm and 110Kv GIS Substation.

Tarragona Solar Farm (Valencia, SP)- ABO Wind. (2023). Solar Farm, Pylon array and Substation.

Lysaghtstown Solar Farm- Terra Solar (2018). Multi-phase Solara Farm and Substation.

O’Hanrahan Bridge, New Ross- Roghan & O’Donovan (2022). Bridge widening project with traffic realignment.

Irish Rail Signalling Project- Irish Rail (2013). Bridge widening at two sites and signal system upgrade.

CURRICULUM VITAE

BRIDGET MACFARLANE

LVIA CONSULTANT

BLA (HONS)



PERSONAL PROFILE

Bridget is a Landscape Architect with 5 years' experience, having moved to Ireland at the start of 2024. She is principally involved in the preparation of LVIA reports, as well as the supporting Landscape Mitigation Plans, viewpoint selection and capture. This role involves characterising the existing landscape and the subsequent impacts of the proposal through calibrated site photomontages and professional judgement.

EDUCATIONAL AND PROFESSIONAL STATUS

- Bachelor's (Hons), Landscape Architecture Lincoln University, New Zealand (2018).

EMPLOYMENT HISTORY

- 2023 to Present – Landscape Architect, Macro Works (APEM Group)
- 2022 to 2023 – Landscape Architect at Kamo Marsh Ltd, Queenstown, New Zealand.
- 2019-2022- Landscape Architect at Christchurch City Council, Christchurch, New Zealand

FURTHER EXPERIENCE

- Member of the Irish Landscape Institute

SELECTED RECENT PROJECT EXAMPLES

Bridget has experience in each of the stages associated with Solar Farms, Large-scale Residential Developments (LRD) and Onshore Wind Farms, from early stage scoping through to Planning Stage, including Seascape, Landscape and Visual Impact Assessments, Site Photography, Visibility Analysis, Viewpoint Selection, and mitigation plans for onshore infrastructure.

Claremorris Solar, ProEx Engineering (2024). Project Lead, LVIA, and Landscape Mitigation Plan

Derreenacrinnig Wind Farm (2024). Project Lead, Site Work, LVIA, and Dreenacreenig WF Public Consultation Attendance

Tullamore Dew Solar, Sustech Environmental Services (2024). Project Lead, LVIA, and Landscape Mitigation Plan

Johnstown Castle Solar, Tipperary Energy Agency (2024). Project Lead, LVIA, and Landscape Mitigation Plan

Boscabell Solar, Power Capital, (2024). LVIA, and Landscape Mitigation Plan

Kilmorna Solar, Fehily Timoney (2024). Project Lead, LVIA and Landscape Mitigation Plan

Sceirde Rocks Onshore Cable Route and Converter Station (2024) – Onshore Cable Route and Substation LVIA and Landscape Mitigation Plan

Trim Pedestrian Bridge, (2023) LVIA on a heritage site

Wellman Solar, Boylan Engineering (2023). Project Lead, LVIA, and Landscape Mitigation Plan

Naas Logistics Warehouse (Maudlins). Project Lead and LVIA

Kiljames Wind Farm Feasibility. Project Lead and Feasibility Report

CURRICULUM VITAE

BRIDGET MACFARLANE

LVIA CONSULTANT

BLA (HONS)



PERSONAL PROFILE

Bridget is a Landscape Architect with 5 years' experience, having moved to Ireland at the start of 2024. She is principally involved in the preparation of LVIA reports, as well as the supporting Landscape Mitigation Plans, viewpoint selection and capture. This role involves characterising the existing landscape and the subsequent impacts of the proposal through calibrated site photomontages and professional judgement.

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- 2019-2022- Landscape Architect at Christchurch City Council, Christchurch, New Zealand

FURTHER EXPERIENCE

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SELECTED RECENT PROJECT EXAMPLES

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Claremorris Solar, ProEx Engineering (2024). Project Lead, LVIA, and Landscape Mitigation Plan

Derreenacrinnig Wind Farm (2024). Project Lead, Site Work, LVIA, and Dreenacreenig WF Public Consultation Attendance

Tullamore Dew Solar, Sustech Environmental Services (2024). Project Lead, LVIA, and Landscape Mitigation Plan

Johnstown Castle Solar, Tipperary Energy Agency (2024). Project Lead, LVIA, and Landscape Mitigation Plan

Boscabell Solar, Power Capital, (2024). LVIA, and Landscape Mitigation Plan

Kilmorna Solar, Fehily Timoney (2024). Project Lead, LVIA and Landscape Mitigation Plan

Sceirde Rocks Onshore Cable Route and Converter Station (2024) – Onshore Cable Route and Substation LVIA and Landscape Mitigation Plan

Trim Pedestrian Bridge, (2023) LVIA on a heritage site

Wellman Solar, Boylan Engineering (2023). Project Lead, LVIA, and Landscape Mitigation Plan

Naas Logistics Warehouse (Maudlins). Project Lead and LVIA

Kiljames Wind Farm Feasibility. Project Lead and Feasibility Report

Tony Cummins BA MA

Senior Archaeologist & EIA Consultant (John Cronin and Associates)

TONY CUMMINS has been a Senior Archaeologist with John Cronin & Associates since 2009 and has accumulated 30 years' continuous industry experience since graduating with a Master's degree in Archaeology in 1994. He has extensive experience in the preparation of EIA scoping reports, option assessments and EIAR chapters for a wide range of large-scale developments, including a wide range of wind farm projects.

Professional Qualifications

Batchelor Degree (Archaeology) University College Cork, 1992

Master's Degree (Archaeology), University College Cork, 1994

Relevant Experience

Mr. Cummins worked on a wide range of excavation projects following his graduation with a Master's degree in Archaeology in 1994 and was approved as a licence-eligible archaeologist by the National Monuments Service in 1998. Since that time, he has directed numerous excavations in Ireland and also participated in archaeological projects in Britain and Lebanon. He also gained management experience as the senior project archaeologist during the construction phase of large-scale infrastructure road schemes, including the Limerick Southern Ring Road and the Waterford City Bypass. Mr. Cummins has prepared assessments for a wide range of energy supply projects over recent decades, and these have included ESBI transmission lines as well as a wide range of wind farm developments (including associated grid connection and haul routes). His inputs to these projects have included liaising with developers, project designers, statutory authorities and other EIA consultants as well as the preparation of EIAR chapters based on programmes of detailed desktop research and field surveys.

The following are examples of some of the current and completed wind farm EIAR chapters that he has prepared in recent years:

- Garryhinch Wind Farm, Co. Laois
- Castlepook Wind Farm, Co. Cork
- Fahy Beg Wind Farm, Co. Clare
- Annagh Wind Farm, Co. Cork
- Coom Wind Farm, Co. Cork
- Gort Uí Rathaile Wind Farm, Co. Cork
- Inse Mhór Wind Farm, Co. Cork
- Ballykett Wind Farm, Co. Clare
- Moanmore Wind Farm, Co. Clare
- Tullaghmore Wind Farm, Co. Galway
- Croaghaun Wind Farm, Co. Carlow
- Castlegarden Wind Farm, Co. Kilkenny
- Coomnagappul Wind Farm, Co. Waterford
- Dyrrick Hill Wind Farm, Co. Waterford

Name	Kevin Hayes
Position	Engineering Manager
Role	Project & Client Management
Qualifications	B.Eng Hons. - Electronic Eng, M.Eng Hons. Communications Engineering Aviation OLS Assessment Training 2020

Relevant Experience :

- Software Design Engineer
- Founding Director Ai Bridges (2000 – present)
- Telecommunications Network & Software Design
- Telecommunications Radio Planning & Engineering Services
- Client Project Management for Renewable Sector Telecommunications, Aviation, Broadcast, Emergency Service infrastructure Impact Assessment Study Projects.
- R&D responsibilities at AiBridges for all Telecommunications and Aviation for 3D Software Interference Prediction Modelling services.
- Responsibility for Design of Mitigation Measure & Remediation Solutions for Telecommunications, Aviation, Broadcast, Emergency Service Projects

Reference Project Experience :

- Coillte – Violet Hill – Telecommunications & Aviation Impact Assessment Studies
- Coillte\ESB – Castlepook – TVI Assessment & Remediation Solutions Project.
- Coillte\ESB – Raheenlagh – TV Interference & EMI Broadband Impact Assessments
- Coillte – Corbally Wood - Telecommunications & Aviation Assessment Studies.
- Future Energy Ireland – Knockshanvo – Telecoms & Aviation Impact Assessment
- Future Energy Ireland – Lissinagroagh – Telecoms & Aviation Impact Assessment
- ESB – 12-site Projects – 5-year Framework for provision of TV Interference Modelling & Remediation Project
- SSE – ROI & NI Sites - Framework for Provision of Managed Telecommunications Network & Software Modelling
- Bord Na Mona - Bruckana & Mount Lucas – Pre-Construction & Post-Construction Telecoms & TVI Broadcast Impact Assessments Project.
- Project Management “self-help” transmitter contract for Dromada Wind Farm Wireless Signal Interference Project.

Name	Patrick Tinney
Position	Junior Telecoms Engineer
Role	Telecoms Field Network Engineering
Qualifications	B.Sc Computer & IT Systems Radio Planning Pathloss & ATDI 2019

Relevant Experience :

- Field Services Management – 3 years(including Safety Committee Representative Role)
- AI Bridges (present - 2014)
- Field Surveys and RF planning using CE4 software prediction tools for UMTS mobile and fixed wireless networks
- Telecoms Management - roll-out of fixed wireless access in Ireland across 200+ wind farms & solar parks.
- AI Bridges - Senior Radio Engineer & Field Supervisor (2017 – Present)
- AI Bridges – Telecoms & Aviation & EMI Field Survey Assessments
- AI Bridges - planning/software modelling using software prediction & data calibration tools

Reference Project Experience :

- Coillte – Violet Hill – Telecommunications & Aviation Field Survey Assessments
- Coillte\ESB – Raheenlagh – TV Interference & EMI Broadband Assessment Reports
- Coillte – Corbally Wood - Telecommunications Filed Assessment Reports & Analysis
- Future Energy Ireland – Knockshanvo – Telecoms Radio Analysis Assessment Report
- Future Energy Ireland – Lissinagroagh – Telecoms Filed Survey, Assessment Report
- ESB WD – Grouselodge, Carrickateane , Eglish, Crockdun , Hunters Hill , Crockagarraon – Residential Broadband Desk-top software prediction modelling services and completion of TV, GSM and Broadband Interference Reports.
- Airtricity\SSE – Slieve Kirk, Glenconway, Tievnameenta - Co-ordinated Field Engineering Surveys & Drive-through Assessments for TV , EMI Broadband
- Bord Na Mona - Bruckana & Mount Lucas –Telecoms, EMI Broadband, TV Interference Prediction Modelling & Analysis
- Statkraft – Taghart, Raragh – Management of TV & EMI Interference Assessments Remediation & Mitigation Measure implementations

Curriculum Vitae
Edward McCormack, BSc, PhD
Nationality: Irish
Profession: Marine Biologist/Ecologist
Specialisation: Environmental Monitoring/Marine Faunal Taxonomy
Position in Firm: Associate Director

2003 *National university of Ireland, Galway* *Ph.D. in Zoology*
1997 *National university of Ireland, Galway* *B.Sc. (Hons) in Marine science*

Key Competence

Taxonomy of marine and freshwater Copepoda.

Taxonomy of macroinvertebrates including Crustacea, Polychaeta, Mollusca, Echinodermata as well as other minor taxa

Taxonomy of deep sea invertebrates

Taxonomy of zooplankton

Taxonomy of marine free-living nematodes

Intertidal fauna and macroalgae surveying

EIA Directive and Habitats Directive

SSRS training provider

Since 1997 Eddie has carried out subtidal and intertidal surveys on numerous waterbodies around the Irish coast with multiple locations including counties Donegal, Sligo, Mayo, Galway, Clare, Limerick, Kerry, Cork, Waterford, Wexford, Dublin, Meath and Louth as well as offshore sandbanks off Donegal and within the Irish Sea and deep sea regions of the Rockall Trough, Porcupine Bank and British Columbia. Eddie is experienced in the design, execution, processing and analysis of subtidal and intertidal surveys. This includes the use of Day and Van Veen grabs, Railler-du-Baty dredges, epibenthic sledges and cores. He is very familiar with all sampling methodologies and guidelines which must be adhered to whilst sampling. Eddie has carried out multiple Sediment Profile Imagery (SPI) surveys offshore including in the Irish Coast, North Sea and west coast of Canada. He has also vast experience in the processing of faunal and sediment samples on board ship and the in situ identification of fauna and macroalgae. In addition to being highly experienced in subtidal and intertidal sampling methodologies and protocols, Eddie is also a taxonomist with over 20 years experience. His taxonomic experience is wide ranging and includes Crustacea, polychaetes, Mollusca, echinoderms and other minor taxa of subtidal macrofauna. In addition, he has extensive experience in the taxonomy and identification of meiofauna (especially Crustacea and Nematoda), deep sea invertebrates (including Crustacea, echinoderms, Mollusca), zooplankton, freshwater macroinvertebrates and macroalgae. He has developed and delivered training workshops on the identification of marine invertebrates. Eddie delivers the EPA approved SSRS training course for AQUAFAC. This has involved the training and certification of members of multiple local authority and private sector companies in identification of freshwater macroinvertebrates and freshwater sampling methodologies to a level sufficient to perform SSRS assessments. Consultancy work has focused on the implementation of European legislation including the EIA Directive, the Habitats Directive. Eddie has a current certificate of proficiency in personal survival techniques on board ship.

Eddie has worked for the Aquaculture Licence Appeal Board (ALAB) as a technical advisor on four separate appeal cases, including an oral hearing. He has been involved in surveying, analysis and reporting for multiple EIARs for aquaculture licence renewal applications for twenty marine finfish sites located off the southwest, west and northwest coasts.

Eddie has also worked for the Marine Institute on the intercalibration of Water Framework Directive monitoring tools for coastal water bodies. The METRIC (Marine Ecological Tools for Reference, Intercalibration and Classification) project involved the assessment of the Irish and UK benthic macroinvertebrate monitoring tool – the IQI (Infaunal Quality Index). Data collected throughout the project from 6 coastal waterbodies were used to test and validate the IQI. Eddie was responsible for the design, execution and analysis of each survey including the identification of macrofauna.

Eddie has completed a report on behalf of the Marine Institute on the environmental impacts of mariculture within the OSPAR region. This report was published by OSPAR in 2009 and was used to inform on OSPAR's 2010 QSR (Quality Status Report).

Eddie has completed the technical report for a European level project for the Marine Institute (MEFEPO). This project involved the collation of all marine data (physical, chemical and biological) collected for ICES Regions VIa, VIb, VIIa, VIIb, VIIc, VIId, VIIe, VIIf, VIIg, VIIh, VIIj, and VIIk (OSPAR Regions II, III and V). All species, habitats, conservation designation sites, shipping routes, current patterns etc were referenced for the purpose of mapping the data.

Education and Professional Status

Dissertation:

2003 Research for PhD Thesis entitled "The Harpacticoid Copepoda from Maerl substrates in Galway Bay, Ireland"

1997 Research thesis entitled "Planktonic Copepoda from Kilkieran Bay, Ireland" within B.Sc. Honours course in Marine Science at NUI, Galway.

Employment Record:

2022 – present. Associate Director at AQUAFACT.

2007 - 2022 Principal Ecologist with AQUAFACT International Ltd. with responsibility for faunal identification in subtidal and intertidal benthic surveys, zooplankton analysis, , SPI survey and reporting, Aquaculture Licence Appeal Board (ALAB), SSRS training and technical report writing.

2007 Laboratory technician – Deep water survey programme, MEFS & FSS, Marine Institute. Identification of deep sea invertebrate bi-catch from the Marine Institute FSS Deepwater survey programme, and production of a taxonomic pictorial guide for future deep sea surveys.

2007 Scientific & technical officer, Benthic Ecology at the Marine Institute, Galway, assigned to the benthic element of the **METRIC Water Framework Directive** project. Responsibilities included data discovery, planning and implementation of a field sampling programme, processing, identification and analysis of taxa and preparation of reports.

2006 Post doctoral researcher with the Zoology Department, NUI, Galway, Working on the Kinsale harbour study. Responsibilities included extensive fieldwork in collection of benthic infaunal and intertidal samples, training in use of SPI (Sediment Profile Imagery) technology, and the sorting and identification of benthic fauna in the lab.

2004 – 2005 Co-supervisor of research for two Zoology Ph.D. students, providing training in taxonomy, micro dissection and scientific illustration of deep sea crustaceans.

2005 Environmental consultant with Saorgus Energy Ltd., Tralee, Co. Kerry. Responsibilities involved the composition of an Environmental Impact Statement on a proposed offshore wind farm on the Bray and Kish banks in the Irish Sea and included a desk based study to assess the baseline conditions of marine mammals in the study area.

- 2004** Internal examiner with the Zoology Department, NUI, Galway on the first year animal biology paper.
- 2004** Employed by NUI, Galway to tutor first year biology repeat students and second year Zoology students in preparation for exams.
- 2004** Employed by the Zoology department to design and teach a third year Zoology practical on the taxonomy and ecology of the marine meiofauna with reference to species content in various substrates
- 2003** Consultant with Marine Institute. Investigated possible jellyfish responsibilities in salmon mortalities at Inver bay and McSwyne's bay fish farms, Co. Donegal during 2003.
- 2000** Research assistant. Worked as a taxonomist for the EU funded SEAMAR project (Shelf Edge Advection, Mortality and Recruitment) Gained experience and skill in identification of zooplankton and phytoplankton. Trained several research assistants in identification of zooplankton.
- 2000 & 2001** Teaching assistant. Trained final year B.Sc. students in taxonomy, micro dissection and identification of zooplankton as part of their final year research projects.

Freshwater Project Experience

- 2022-2024. Project Manager for Aquatic Ecology EIAR chapters for Greensource Ballykett, Moanmore, and Garrane Wind Farm Projects
- 2022 M7/8 mid link Q-value assessment of the River Goul along the M8 motorway.
- 2022 N25 south link Q-value assessment of the River Millinabro along the N25.
- 2020 N5 Westport to Turlough Road project macroinvertebrate sampling of streams intersecting the project, Co. Mayo.
- 2020 M7/8 mid link Q-value assessment of the River Gully along the M8 motorway.
- 2019 N25 south link Q-value assessment of the River Millinabro along the N25.
- 2019 M7/8 mid link Q-value assessment of the River Mills along the M8 motorway.
- 2019 M1 north Link Q-value assessment of eight rivers along the motorway.
- 2019 Scríob Hatchery discharge Q-value assessment Co. Galway.
- 2019 Pollmounty Hatchery discharge Q-value assessment Co. Wexford and Co. Carlow.
- 2018 Annual Q-value assessment of rivers and streams flowing through Oweninny Wind Farm, Co. Mayo.
- 2018 SSRS and Q-value assessment of a Dairy factory's discharge to the River Blackwater, Co. Monaghan.
- 2017 Pre-construction Q-value assessment of rivers and streams flowing through Oweninny Wind Farm, Co. Mayo.
- 2015 Q-value assessment of the Anner River, Clonmel as part of an Appropriate Assessment.
- 2015 Q-value assessment of the Oweninny River, Mayo.

SSRS training course experience

- 2023 Delivery of SSRS Training Course to Atlantic Technical University 3rd year students
- 2022 Delivery of SSRS Training Course to APEM Ireland and Woodrow Sustainable Solutions Ltd
- 2017 Delivery of SSRS Training Course to field analysts with EPA, and environmental consultancy companies City Analysts Ltd. and Woodrow Sustainable Solutions Ltd
- 2016 Delivery of SSRS training course to NUI, Galway students
- 2016 Delivery of SSRS training course to Tipperary County council.
- 2016 Delivery of SSRS training course to Monaghan County Council

- 2016 Delivery of SSRS training course to field analyst from Tobins Engineers.
- 2016 Delivery of SSRS training course to field analyst from Whitehall Environmental Ltd.
- 2016 Delivery of SSRS training course to Limerick County Council
- 2016 Delivery of SSRS training course to Louth County Council
- 2015 Delivery of SSRS training course to Cavan County Council.
- 2015 Delivery of SSRS training course to Leitrim County Council
- 2013 Delivery of SSRS training course to Shell staff.

Renewable Energy Project experience

Advisory Roles – Ecological, consent and strategic advisor for ongoing offshore wind energy developments.

Appointed technical advisor to offshore wind farm developers. Responsibilities include the provision of technical review of the statutory compliance of EIA Screenings, Non-statutory Environmental Reports, Screening of AA and NIS, and Annex IV Species Risk Assessment reports to support consent applications. Where necessary recommendations are made with regard revisions to the reports to achieve compliance with statutory requirements. Also responsible for expert technical review of the ecology content of reports, and the associated impact assessments presented within. Recommendations are made with regard to revisions to be made to the reports to address gaps in knowledge and to strengthen the impact assessments.

Ecological surveyor and advisor for the Codling Wind Park and Dublin Bay Array development in the eastern Irish Sea

Codling Wind Park - Overseen subtidal benthic survey in 2021 for the Codling Wind Park Development. Survey included grab sampling for macrofaunal and sediment analysis and drop down video transects. Input to impact assessments as part of the EIAR. Responsible for survey design and subsequent execution.

Dublin Bay Array - Managed intertidal survey for the Dublin Bay Array land fall routes. This body of work included Phase 1 intertidal walkover surveys and soft sediment core surveys. Oversight and input to impact assessments as part of the EIAR. Also responsible for survey design and final reporting.

Arklow Wind Park Project – Undertook Phase 1 intertidal walkover surveys in 2019 to provide a baseline characterisation of the intertidal ecology of the proposed landfall sites located north of Arklow town along the shore south of Ennereilly Beach while the South Landfall Site along part of an existing rock armour revetment from Arklow North Pier to Mill Road. Undertook benthic survey in 2020 at Arklow Marina to accompany an application by SSE for approval for the construction of operations and maintenance base at the marina for the wind park. Responsible for project Health and Safety, survey design, survey execution and reporting.

Ecological and strategic advisor for the development of hydroelectric turbines at Toormakeady, Co Mayo. Ecological surveyor and advisor on NIS reporting for terrestrial wind farms at Oweninny Wind Farm and Sheshkin Wind Farm Co Mayo, and Galway Wind Park.

Onshore and Offshore Aquaculture

Project management of EIAR and NIS reporting for aquaculture licence renewal applications for twenty marine finfish sites located off the southwest, west and northwest coasts, and two land-based hatcheries in Co. Donegal. Responsible for overall project management and reporting

This body of work was undertaken in 2021 and 2022 for five aquaculture companies, including MOWI Ireland, and required management and delivery of all aspects of EIAR and NIS reporting.

Subtidal Experience Record

- **2024** Wicklow Harbour Dredge Disposal Site – Site Selection process
- **2023-2024** Limerick WWTP expansion. Intertidal and subtidal baseline surveys, faunal analysis and reporting
- **2023** Dublin Bay DaS site. Ecological Surveys – faunal analysis and reporting
- **2023** Zooplankton analysis Marine Institute – COMPASS project
- **2023** Treanbeg Kenmare – subtidal and intertidal faunal analysis
- **2022** Zooplankton analysis Marine Institute – COMPASS project
- **2007-2023** Benthic audits including faunal analysis for MOWI aquaculture sites in Ireland
- **2021** Subtidal benthic faunal grab survey and drop down video survey of Codling Bank Wind Park
- **2020** Benthic survey and faunal taxonomy identification and analysis for WFD benthic samples from Kinsale Harbour, Lough Mahon, North Channel Great Island, Cork Harbour, Wexford harbour, Slaney Estuary, and Lower Suir Estuary in 2020 for the Marine Institute.
- **2019** Benthic survey and faunal taxonomy identification and analysis for WFD benthic samples from Waterford Harbour, Suir Estuary, Wexford Harbour, Slaney Estuary, Dungarvan Harbour, Colligan Estuary, Youghal Harbour, Blackwater Estuary, Kinsale Harbour and Cork Harbour as part of the WFD Monitoring Programme on behalf of the Marine Institute.
- **2019-2020**. Zooplankton surveys at Lady's Island Lake and Ballyteige Lagoon, Co. Wexford.
- **2019** Benthic faunal survey of Oriel Wind Farm site, Irish Sea.
- **2019** Benthic faunal and planktonic surveys of Killybegs Disposal at Sea site.
- **2018** Faunal Taxonomy for WFD benthic samples Tolka Estuary and Liffey Estuary as part of the WFD Monitoring Programme on behalf of the Marine Institute.
- **2018** Warrenpoint, Co. Down. Benthic sled video analysis of subtidal reef.
- **2018** Faunal taxonomy of Irish Sea marine benthos for Marine Institute razor clam survey.
- **2017** Faunal Taxonomy for WFD benthic samples from Killary Harbour, Inner Clew Bay, Galway Bay, Kinvara Bay, Tolka Estuary and Liffey Estuary as part of the WFD Monitoring Programme on behalf of the Marine Institute.
- **2017** Faunal Taxonomy for benthic grab samples from a marine benthic survey of Buncrana Harbour for Dredging and Disposal operations on behalf of Donegal County Council.
- **2017** Faunal Taxonomy for benthic grab samples from a marine benthic survey of Fenit Harbour for Dredging and Disposal operations on behalf of Kerry County Council.
- **2017** Faunal Taxonomy for benthic grab samples from a marine benthic survey in vicinity of Arthurstown, Ballyhack and Duncannon Wasterwater treatment plant discharge locations in Waterford Estuary, Co. Waterford.

- **2016** Faunal Taxonomy for WFD benthic samples from the Killary Harbour, Outer Clew Bay, Newport Bay, Westport Bay, Broadhaven Bay, Sruwaddacon Bay, Killala Bay, Ballysadare Bay, Galway Bay, Kilkieran Bay, Camus Bay and the Shannon Estuary as part of the WFD Monitoring Programme on behalf of the Marine Institute.
- **2016** Faunal Taxonomy for benthic grab samples from razor clam habitat between Dundalk and Balbriggan on behalf of the Marine Institute.
- **2016** Identification, enumeration and biomass of benthic samples from the Outer Ards Peninsula on behalf of AFB
- **2015-2016** Faunal Taxonomy for benthic grab samples from Killibegs Dredge and Disposal Sites on behalf of DAFM.
- **2015-2016** Faunal Taxonomy for benthic grab samples from Rossaveal Dredge and Disposal Sites on behalf of DAFM.
- **2008-2019** Identification and enumeration of MOWI Ireland (formerly Marine Harvest Ireland) fish farm audit samples
- **2015** Sampling, identification and enumeration of WFD Benthic Samples from Kinvara Bay, Galway Bay, Liffey Estuary and Tolka Estuary.
- **2015** Sampling & Faunal Taxonomy for WFD benthic samples from the Liffey, Tolka and Corrib Estuaries and Kinvara Bay as part of the WFD Monitoring Programme on behalf of the Marine Institute.
- **2015** Identification and enumeration of WFD Benthic Samples from Dublin Bay, Killiney Bay, South West Irish Sea, Waterford Harbour, Outer Cork Harbour, Kinsale Harbour, Roaringwater Bay and Kenmare Bay.
- **2015** Taxonomy of marine benthic samples from Dublin Bay, Killiney Bay, Kinsale, Cork Harbour, Southwest Irish Sea, Waterford Harbour, Roaringwater Bay and Kenmare Bay as part of the WFD Monitoring Programme on behalf of the Marine Institute
- **2015** Sediment Profile Imagery (SPI) survey of proposed dredge disposal grounds in Kittimat Arm, British Columbia, Canada including faunal identification and reporting.
- **2015** Sediment Profile Imagery (SPI) survey of the Brent Field, North Sea, United Kingdom as part of the 2016 Brent Decommissioning Project.
- **2015** Identification of macrofauna from all finfish aquaculture benthic monitoring programmes.
- **2014** Developed and delivered a marine invertebrate identification workshop in Portaferry, Co Down on behalf of IBIS and the Loughs Agency, Northern Ireland.
- **2014** Sediment Profile Imagery (SPI) survey of proposed dredge disposal grounds in Prince Rupert, British Columbia, Canada including faunal identification and reporting.
- **2014** Identification of marine macroinvertebrates from environmental surveys of Qatar and Bahrain.
- **2014** Identification of macrofauna from all finfish aquaculture benthic monitoring programmes.
- **2014** Subtidal benthic sampling of Galway Bay, Kilkerrin Bay, Camus Bay and Kinvara Bay on behalf of the Marine Institute and the EPA as part of the WFD. Taxonomic identifications also carried out.
- **2013** Surveys of Intertidal faunal communities associated with *Ascophyllum nodosum* along the Mayo and Galway coastlines.
- **2012-2013** Identification and enumeration of WFD Benthic Samples and Marine Harvest fish farm audit samples
- **2011-2012** Identification and enumeration of WFD Benthic Samples and Marine Harvest fish farm audit samples

- **2010-2011** Eddie carried out the identification of all phyla from a suite of samples collected from the Shannon Estuary, Hook Head, Saltee Islands, Valentia/Portmagee, Kilkerrin Bay, Mannin Bay, Kingstown Bay, Rutland Island and Mulroy Bay on behalf of the Marine Institute/NPWS. Eddie was also responsible for QA/QC.
- **2009-2010.** Eddie carried out the identification of all phyla from a suite of samples collected from Galway Bay, Clew Bay, Broadhaven Bay, Blacksod Bay, Donegal Bay, Lough Swilly, Wexford Harbour, Bannow Bay and the Blackwater Estuary on behalf of the Marine Institute/NPWS. Eddie was also responsible for QA/QC.
- **2009.** In collaboration with INFOMAR and GSI, Eddie carried out subtidal sampling at Dunmanus Bay, Co. Cork to investigate a potential pockmark field within the bay. This involved the selection of 10 stations, within the area (including suitable control sites) and the replicate grab sampling of each of these stations. 5 faunal replicates were taken per station, along with a sixth for sediment organic carbon and granulometry. Each Day Grab sample was sub-sampled using a corer to investigate meiofauna. Eddie processed all samples onboard ship in accordance with standard methodologies and was responsible for sorting and identification of all fauna. (Macrofauna and meiofaunal Copepoda and Nematoda) within the lab.
- **2009.** In collaboration with INFOMAR and GSI, Eddie carried out subtidal sampling at Bantry Bay, Co. Cork. This involved Day Grab sampling of a GSI-chosen grid within the bay. 25 stations were sampled with 3 faunal replicate samples and a further sample for sediment organic carbon and granulometry. Eddie processed all samples onboard ship in accordance with standard methodologies.
- **2009.** Benthic subtidal faunal survey of Fenit Harbour, Co. Kerry for Fenit Harbour and Marina EIS. Eddie was responsible for the identification of all fauna from 10 stations with 3 replicates per station.
- **2008.** Benthic subtidal survey for NPWS of Hempton's Turbot sand bank off the coast of Donegal. Eddie was responsible for the identification of all fauna from 14 stations taken as part of the MESH sampling schedule. Eddie also determined the biomass of each of the major faunal groups.
- **2008.** Rogerstown Biological Survey. Eddie was responsible for the identification of all fauna from a subtidal survey of Rogerstown Estuary, Co. Dublin to establish baseline conditions. 10 stations with 3 replicates per station were sampled.
- **2008.** Intertidal and Subtidal benthic studies in Broadmeadow Estuary, Co Dublin. Eddie was responsible for the identification of all fauna from 11 subtidal stations (3 replicate faunal samples).
- **2008.** Rosslare Harbour Subtidal survey, Co. Wexford. Eddie was responsible for the identification of all fauna from 10 stations at Rosslare harbour to establish baseline conditions prior to dredging at Rosslare Europort.
- **2008.** Survey of Galway Temporary Moorings site. Eddie was responsible for the identification of all fauna from 5 stations (2 faunal replicates) to establish baseline conditions prior to construction of temporary moorings in inner Galway bay.
- **2008.** B.I.M. Carrying Capacity Investigation. Eddie was responsible for the identification of all fauna from 12 subtidal stations (3 replicates) at Dungarvan Bay, Co. Waterford and 12 subtidal stations (3 replicates) from Wexford Harbour to determine the carrying capacity of each area for cultured bivalves by assessing the populations of non-cultured filter feeding taxa.
- **2007.** Benthic Subtidal Survey for NPWS of marine sandbanks at Long Bank and Holdens Bank in the Irish Sea and Turbot bank in the Shannon Estuary. Eddie was responsible for the identification of all fauna from each of the sites - 11 stations from Long bank and 4 stations each from Holdens Bank and Turbot Bank.

- **2007.** Subtidal Survey at Waterford harbour. Eddie was responsible for the identification of all fauna from 5 stations (3 replicates) to establish baseline conditions along a proposed pipeline route.
- **2007.** Marine Ecological Survey for proposed pipeline routes in Shannon Estuary and Cork Harbour. Eddie was responsible for the identification of all fauna from 9 stations (3 faunal replicates) at both the Cork and Shannon sites.
- **2007.** Benthic survey for NPWS of Galway Bay cSAC. Eddie was responsible for the identification of all fauna (excluding Polychaetes) from grab (2mm, 1mm and 0,5mm fractions) and dredge samples (2mm) from the NPWS survey of the Galway Bay cSAC.
- **2007.** Eddie served as a laboratory technician onboard the R.V. Celtic Explorer during the Marine Institute FSS Deepwater Survey programme. He was responsible for the identification of all invertebrate by-catch from deepwater trawls along the continental shelf edge of the Porcupine Bank and west of the Hebrides between 500m and 1800m. Additional tasks included the production of a taxonomic invertebrate pictorial guide for future deep sea surveys.
- **2007.** Eddie, as part of the Marine Institute **Water Framework Directive** project METRIC (Marine Ecological Tools for Reference, Intercalibration and Classification) was involved in the Intercalibration of the Infaunal Quality Index (IQI) tool for assessing coastal water quality under the **WFD**. Responsibilities included the sampling regime planning, execution, analysis and reporting of subtidal surveys in Irish coastal waters. Waterbodies surveyed including Mulroy Bay, Dundalk Bay, Dublin Bay, Clew Bay, Killary Harbour and Bantry Bay.
- **2006.** Eddie served as a laboratory technician onboard the R.V. Celtic Explorer during the Marine Institute FSS Deepwater Survey programme. He was responsible for the identification of all invertebrate by-catch from deepwater trawls along the continental shelf edge of the Porcupine Bank and west of the Hebrides between 500m and 1500m.
- **2006.** Eddie worked within the Benthos Research Group at NUI, Galway which involved sampling, sorting and identification of annual surveys of Kinsale Harbour.
- **1997-2001.** Investigation of the subtidal harpacticoid copepod fauna of Galway Bay including maerl beds at Carraroe and Muckinish, shell/sand substrates at Finavara, sandy shores at Mweenish, sand/mud substrate at Margaretta bouy, Galway bay. Samples taken with meiofaunal corer and sieved on a 63µm mesh sieve.

SPI Experience:

- 2007-2023. Sediment Profile Imaging analysis for MOWI Ireland (formerly Marine Harvest Ireland) fish farm benthic audits.
- 2018 Sediment Profile Imaging at and in the vicinity of the Sand Heads Disposal Site, Strait of Georgia, B.C. Data analysis and reporting
- 2018 Sediment Profile Imaging at and in the vicinity of the Point Grey Disposal Site, Strait of Georgia, B.C. Data analysis and reporting
- 2018 Sediment Profile Imaging at and in the vicinity of the Cape Mudge Disposal Site, Strait of Georgia, B.C. Data analysis and reporting
- 2018 Sediment Profile Imaging at and in the vicinity of the Newcombe Channel Disposal Site, Strait of Georgia, B.C. Data analysis and reporting
- 2017 Sediment Profile Imaging at and in the vicinity of the Comox (Cape Lazo) DaS site, Strait of Georgia, British Columbia
- 2017 Sediment Profile Imaging at and in the vicinity of the Cape Mudge DaS site, Strait of Georgia, British Columbia

- 2017 Sediment Profile Imaging at and in the vicinity of the Point Grey DaS site, Strait of Georgia, British Columbia
- 2016 Sediment Profile Imaging at and in the vicinity of the Five Finger Island DaS site, Strait of Georgia, British Columbia
- 2016 Sediment Profile Imaging at and in the vicinity of the Sand Heads DaS site, Strait of Georgia, British Columbia
- 2016 Sediment Profile Imaging at and in the vicinity of the Watts Point DaS site, Strait of Georgia, British Columbia
- 2016 Sediment Profile Imaging at and in the vicinity of the Porlier Pass DaS site, Strait of Georgia, British Columbia
- 2016 Sediment Profile Imaging at and in the vicinity of the Thornbrough Channel DaS site, Strait of Georgia, British Columbia
- 2016 Sediment Profile Imaging of Inver Bay, Co. Donegal to characterise the baseline environment for a proposed aquaculture development
- 2015 Sediment Profile Imaging at and near the vicinity of the Kitimat Arm Disposal Site, BC, Canada
- 2015 Sediment Profile Imaging (SPI) Survey Brent Field, North Sea, United Kingdom Part of the 2016 Brent Decommissioning Project
- 2014 Tier 1 Monitoring of Brown Passage Disposal at Sea Site using Sediment Profile Imagery, Prince Rupert, B.C., Canada
- 2014 Environmental Baseline Study using Sediment Profile Imagery of Proposed Dredge Disposal Site at Coast Island, Prince Rupert, B.C., Canada

Intertidal Survey Experience

- **2022-2024** Hook Head Intertidal surveys
- **2021** Intertidal survey of proposed cable route land falls at Poolbeg and Shanganagh for Dublin Array
- **2021** Intertidal faunal analysis of samples from proposed cable route land fall locations for Codling Bank Wind Park.
- **2020** Intertidal biomass survey at Dungarvan Bay, Co. Waterford.
- **2019** Intertidal and subtidal surveys at a pontoon dredge site at Courtmacsherry, Co. Cork
- **2017** Intertidal surveys at 58 locations at Mweeloon, Tawin, Co. Galway
- **2017** Intertidal surveys at Roman Island, Westport Harbour, Co. Mayo
- **2017** Intertidal surveys at potential landfall sites, Bray Co. Wicklow.
- **2016** Intertidal surveys for Silver strand to Sailin coastal protection and walkway scheme, Galway.
- **2015** Intertidal habitat survey at Renmore Point, Galway.
- **2014** Intertidal surveys at 5 potential landfall sites for a proposed wave farm in the Doonbeg/Killard area, Co. Clare.
- **2013** Intertidal surveys of seaweed harvest sites at 32 locations along the Mayo and Galway coastlines.
- **2013/2014** Intertidal surveys at the landfall site of a proposed brine discharge pipeline and at the landfall site of a proposed seawater intake pipe off Larne, Co. Antrim.
- 2010/2011. Intertidal surveys along the full length of the Shannon Estuary, north and south coasts.
- 2010. Intertidal surveys close to Dunany Point, Co. Louth for a proposed wind farm landfall site.
- 2008. Intertidal sampling at 3 locations in Bull's Mouth, Achill Island.

- 2007. Intertidal sampling at 2 locations in the Shannon Estuary for a suitable landfall site for an offshore cable.

Workshops

NMBAQC 2016, Benthic Invertebrate Taxonomic Workshop for Experts – Paraonidae and Spionidae, Millport Field Centre, Isle of Cumbrae.
 NMBAQC 2010, Experts Taxonomic workshop at Dove Marine Laboratory, Cullercoats, November 2010.
 Problem Taxa: Cumacea, Scale Worms and Lumbrineridae

Awards

Awarded funding under the British Natural History Museum Bioresource scheme, which allows researchers from EU member states to access the museum's collections, libraries and laboratories.
 Received specialist training from the staff of the Crustacean Research Group in taxonomy, phylogenetics and SEM technology.

Membership

The Crustacean Society
 Conchological Society of Great Britain and Ireland

Publications & Selected Reports

AQUAFAC. 2024. Hook Head Intertidal Ecology Survey
 AQUAFAC 2024 Limerick WWTP Intertidal and Subtidal Ecology
 AQUAFAC 2023. Dublin Bay DaS Ecological Surveys
 AQUAFAC 2023 MOWI Ahabeg fish farm benthic audit
 AQUAFAC 2022. Marine Benthic Faunal Ecology Survey, Marine Dredging Monitoring for the Killybegs Smooth Point Pier Extension
 AQUAFAC 2022. Carnlough and Belfast DaS site pre- and post-disposal benthic ecology surveys
 AQUAFAC. 2021. Codling Wind Park Benthic Faunal Survey
 AQUAFAC. 2021. Codling Wind Park Drop Down Video Survey
 AQUAFAC. 2021. Dublin Array Intertidal Surveys
 AQUAFAC. 2020. Water Framework Directive Benthic Sampling and Analysis. Kinsale Harbour, Lough Mahon, North Channel Great Island, Cork Harbour, Wexford harbour, Slaney Estuary, and Lower Suir Estuary. October 2020.
 AQUAFAC. 2019 Subtidal & Intertidal Assessment Courtmacsherry Pontoon Dredging Project. July 2019.
 AQUAFAC. 2019. Water Framework Directive Benthic Sampling and Analysis. Transitional Water Body: Lower Bandon Estuary, Kinsale, Co. Cork. Report prepared for Marine Institute. January 2020.
 AQUAFAC. 2019. Water Framework Directive Benthic Sampling and Analysis. Transitional Water Body: Lough Mahon, Co. Cork. Report prepared for Marine Institute. January 2020.
 AQUAFAC. 2019. Water Framework Directive Benthic Sampling and Analysis. Transitional Water Body: North Channel Great Island, Co. Cork. Report prepared for Marine Institute. January 2020.
 AQUAFAC. 2019. Water Framework Directive Benthic Sampling and Analysis. Transitional Water Body: Lower Blackwater Estuary, Co. Cork. Report prepared for Marine Institute. January 2020.
 AQUAFAC. 2019. Water Framework Directive Benthic Sampling and Analysis. Coastal Water Body: Youghal Bay, Co. Cork. Report prepared for Marine Institute. January 2020.
 AQUAFAC. 2019. Water Framework Directive Benthic Sampling and Analysis: Transitional Water Body: Colligan Estuary, Co. Waterford. Report prepared for Marine Institute. December 2019.

AQUAFACT. 2019. Water Framework Directive Benthic Sampling and Analysis: Transitional Water Body: Barrow, Nore, Suir Estuary, Co. Waterford. Report prepared for Marine Institute. December 2019.

AQUAFACT. 2019. Water Framework Directive Benthic Sampling and Analysis: Transitional Water Body: Lower Suir Estuary, Co. Waterford. Report prepared for Marine Institute. December 2019.

AQUAFACT. 2019. Water Framework Directive Benthic Sampling and Analysis: Transitional Water Body: Slaney Estuary, Co. Wexford. Report prepared for Marine Institute. December 2019.

AQUAFACT. 2019. Water Framework Directive Benthic Sampling and Analysis: Coastal Water Body: Wexford Harbour. Report prepared for Marine Institute. December 2019.

AQUAFACT. 2019. Water Framework Directive Benthic Sampling and Analysis: Coastal Water Body: Waterford Harbour. Report prepared for Marine Institute. December 2019.

AQUAFACT. 2019. Water Framework Directive Benthic Sampling and Analysis: Coastal Water Body: Dungarvan Harbour. Report prepared for Marine Institute. December 2019.

AQUAFACT. 2018. Water Framework Directive Benthic Sampling and Analysis Inner Clew Bay Coastal Waters Co. Galway. Report prepared for Marine Institute. January 2018

AQUAFACT. 2018. Water Framework Directive Benthic Sampling and Analysis Corrib Estuary Transitional Waters Co. Galway. Report prepared for Marine Institute. January 2018

AQUAFACT. 2018. Water Framework Directive Benthic Sampling and Analysis Kinvara Bay Transitional Waters Co. Galway. Report prepared for Marine Institute. January 2018

ALAB, 2018. Lough Swilly Aquaculture Licence Appeal. Technical Advisors Report, AP2-4 & AP-5/2018. 73pp

AQUAFACT. 2017. Water Framework Directive Benthic Sampling and Analysis Tolka Estuary Transitional Waters Co. Galway. Report prepared for Marine Institute. December 2017

AQUAFACT. 2017. Water Framework Directive Benthic Sampling and Analysis Liffey Estuary Transitional Waters Co. Galway. Report prepared for Marine Institute. December 2017

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AQUAFACT. 2016. Water Framework Directive Benthic Sampling and Analysis Ballysadare Bay Coastal Waters Co. Galway. Report prepared for Marine Institute.

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AQUAFACT. 2016. Water Framework Directive Benthic Sampling and Analysis Killala Bay Coastal Waters Co. Galway. Report prepared for Marine Institute.

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AQUAFACT, 2015. Tier 1 Monitoring of Brown Passage Disposal at Sea Site using Sediment Profile Imagery, Prince Rupert, B.C., Canada

AQUAFACT, 2015. Environmental Baseline Study of Proposed Dredge Disposal Site using Sediment Profile Imagery at Coast Island, Prince Rupert, B.C., Canada

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AQUAFACT 2007. Environmental Survey of the Muirachmhainní Teoranta Aquaculture site at Coonawilleen Harbour, Co. Galway.

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Curriculum Vitae

Aisling Hearty, M.Sc.

Nationality: Irish

Position in Firm: Senior Ecologist

Key Competences

Marine Benthic Macrofaunal Sample Sorting

Quality control checks

Marine macroinvertebrate taxonomy

Environmental report writing

Aisling is a graduate from UCC's Marine Biology M.Sc program with a first class honours (1.1) where she completed her dissertation on bioacoustics in odontocetes. During her time in AQUAFACT, Aisling has become experienced in marine benthic macrofaunal sample processing and taxonomic sorting and she has worked on the sorting of samples for Mowi Ireland benthic audits, on WFD samples from numerous locations and on marine benthic investigations of lagoons, dredge spoil locations and proposed cable routes. She has been trained on polychaete, mollusc and echinoderm species identification and has field work experience in collecting sediment, faunal and water samples from different sites. She also has experience in the preparation of environmental reports such as AA (Appropriate Assessment), NIS (Natura Impact Statement), EIAR (Environmental Impact Assessment Report) and EcIA (Ecological Impact Assessment).

Work Experience

AQUAFACT (APEM Group), Galway, Ireland

August 2019- present: Senior Ecologist

- Preparation and preservation of marine benthic macrofaunal samples
- Sample tracking and QA/QC
- Taxonomic sorting of macrofaunal samples
- Polychaete, mollusc and echinoderm identification
- Preparation of data from samples for further analysis
- Preparation of environmental reports (AA/NIS/EIAR/EcIA)

Orana Wildlife Park, Christchurch, New Zealand

October 2018 – May 2019: Assistant Animal Keeper

- Food preparation and hygiene (Managing weekly meals and knowledge of nutritional needs of various species)
- Managing habitats (Feeding animals, cleaning and cutting browse)
- Creating different forms of enrichment for cognitive stimulation
- Animal observation to determine behavioural and health status in small primates, ungulates and apes

Vancouver Aquarium, Vancouver, Canada

March – June 2017: Stingray Husbandry Volunteer

- Preparation of feeds for the day
- Shovelling and scrubbing of stingray habitat for daily cleaning
- Providing feeds, including scatter feeds, hand feeds and enrichment techniques
- Observation to ensure no injuries or sickness among stingrays

Vancouver Aquarium, Vancouver, Canada

September 2015 – July 2017: Volunteer Marine Mammal Assistant

- Food preparation and assisting in feeding rescued marine mammals
- Unloading and storing food deliveries
- Cleaning of animal's rehabilitation areas and materials
- Assisting in the release of the marine mammals when rehabilitated

Aisling's Relevant AQUAFAC Experience Record:

- 2023 Preparation of NIS and EclA for Sports Facilities at TUS Thurles
- 2022 Preparation of Appropriate Assessment Screening for Ballykrissane solar farm & grid connection
- 2022 Faunal, sediment and water sampling in Wexford Harbour
- 2022 Sediment and faunal collection using a Day grab and underwater video recording off the coast of Belfast
- 2022 Sediment collection from Limerick Harbour using a Van Veen grab
- 2019-2022 Sample sorting, quality checks and polychaete, mollusc and echinoderm ID for Mowi Ireland fish farm audits
- 2021 Sample sorting and quality checks for Codling Bank subtidal & intertidal survey
- 2021 Sample sorting and quality checks for Dublin Bay Array intertidal survey
- 2021 Sample sorting and quality checks for Port of Waterford subtidal survey
- 2021 Sample sorting and quality checks for Dungarvan biomass intertidal survey
- 2020 Sample sorting of benthic samples from Celtic Sea Interconnector route
- 2020 Sample sorting of benthic samples along a cable route across the Shannon
- 2019&2020 Sample sorting of benthic samples from Waterford Harbour, Suir Estuary, Wexford Harbour, Slaney Estuary, Dungarvan Harbour, Colligan Estuary, Youghal Harbour, Blackwater Estuary, Kinsale Harbour and Cork Harbour as part of the WFD Monitoring Programme on behalf of the Marine Institute.
- 2019 Sample sorting of benthic samples from an outfall location in Kilkieran Bay
- 2019 Sample sorting for Killybegs Disposal site
- 2019 Sample sorting of benthos from Lady's Island Lake and Ballyteigue Lagoon as part of the EPA Research programme Project Clear.

Licences and Certificates

- Certificate in sea safety survival (**Personal Survival Techniques**)
- Certificate for **Infection Prevention and Control Training**
- Certificate in **Manual Handling**
- Licence for **Short-Range Range Radio Operations**
- **Powerboat Handling Licence (Level 2)** awarded by the ISA
- **First Aid Responder certificate** awarded by the HSA
- **PADI Open Water Diver** license
- **ENG 11** certification
- **Fire Warden** certification
- **SSRS (Small Streams Risk Score)** training

Publications

Breen, P., *et al.* 2020. Insights into the habitat of deep diving odontocetes around a canyon system in the northeast atlantic ocean from a short multidisciplinary survey. Deep sea research part i: oceanographic research papers, p.103236. DOI: <https://doi.org/10.1016/j.dsr.2020.103236>

CONOR MCGETTIGAN

B.Sc., M.Sc.

DOB: 05/03/1994

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Dungarvan,

Co. Waterford.

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conor@hydroenvironmental.ie

Conor is an Environmental Scientist and has over 5 year's of experience in the environmental sector in Ireland. His experience to date includes;

- Compilation of hydrological and hydrogeological desk study reports;
- Site walkover surveys and water feature surveys, drainage mapping;
- Geological field mapping and field investigations, peat probing and trial pit logging;
- Surface water and groundwater sampling, and surface water flow monitoring;
- Installation of water level monitoring piezometers in peatlands, river callows and sand dune systems using a variety of methods including hand augering and window sampling;
- Water level monitoring and datalogger programming, and water level data management;
- Completion of peat probing investigations to determine peat depths and subsoil geological composition;
- Supervision and logging of ground investigations (i.e. trial pits) for a range of developments ranging from proposed underpasses to large wind farm developments;
- Supervision and logging of investigation drilling boreholes;
- Environmental impact assessment reports (EIARs) and Environmental Reports for numerous projects including wind farms, associated grid connections, housing developments, sand and gravel pits and bedrock quarry developments;
- Preparation of Flood Risk Assessments for a variety of proposed developments;
- Compilation of hydrological, hydrogeological reports, groundwater risk assessments, and WFD Compliance Assessment Reports; and,
- Producing method statements, risk assessments, and EHS plans/documents and acting as H&S officer on various sites.

Conor holds an M.Sc. in Applied Environmental Science (2020) from University College Dublin, graduating with a First-Class Honours degree in 2020. Conor has also completed a B.Sc. in Geology from University College Dublin (First Class Honours, 2016).

Conor has worked on several wind farm EIAR projects, including Ballivor WF and is currently involved in the preparation of the EIARs for 20+ wind farms and associated grid connection routes. Conor was part of the HES team which were appointed as hydrological and hydrogeological consultants by the National Parks and Wildlife Service (NPWS). A particular highlight was the involvement in the NPWS's Liffey Head Bog Restoration project in 2022 and 2023. Conor also works on several bedrock quarry and sand and gravel pit EIAR projects across the country.

MICHAEL GILL PGeo

B.A., B.A.I., M.Sc., Dip. Geol, MIEI, MCIWEM
Civil Engineer/Hydrogeologist

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Dungarvan,
Co. Waterford.

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michael@hydroenvironmental.ie

Michael is a Civil Engineer and Hydrologist/Hydrogeologist with 24 years' of environmental and hydrology consultancy experience. Hydro-Engineering expertise includes:

- Environmental impact assessment reports for numerous projects including roads, landfills, quarries, gas pipelines, and national transport/water infrastructure;
- Specialising in geology and hydrogeology EIAR assessments and discharge licence applications, and associated surface water and groundwater quality assessments;
- Hydrology, karst hydrogeology and Flood Risk Assessments (100+ FRAs);
- Wetland characterisation and impact assessments for Natura 2000 sites, including restoration options;
- Design and supervision of site investigation works, including trial pits, drilling works, geophysics, surface water and groundwater sampling, and scheduling laboratory analyses (soils and water);
- River water quality sampling and assimilative capacity assessments;
- Wind Farms – EIAR / peatland drainage and hydrology (75+ Ireland, 15+ N. Ireland), including construction phase drainage audits;
- Environmental assessments of numerous policies and plans including LAPs (Local Area Plans and SEAs);
- Design and assessment of drainage management systems, incorporating SuDS drainage features, water quality mitigation measures and flood attenuations and flood management systems for construction sites, including specific mitigation for protection of water quality in sensitive receiving waters;
- Undertaking of construction phase (monthly, quarterly, depending on project type and scale and sensitivity of receiving waters) drainage audits to assess mitigation success and overall water quality protection, and also if required recommending specific improvements needed;
- Local Authority licensing of treated wastewater discharges to groundwater and surface water;
- Water well drilling and site investigation procurement and supervision;
- Water resource assessment and development for public and private schemes;
- Source Protection Zone mapping for groundwater supplies (40+);
- Down hole well camera surveying and reporting;
- Water well evaluation and trouble-shooting/rehabilitation;
- Management, supervision and analysis of pumping tests (50+);
- Hydrological and hydrogeological monitoring and modelling;
- Site characterisation reports and wastewater and environmental engineering;
- Subsoil hydrology, assessment of groundwater vulnerability and nutrient impact accounting;
- Providing expert hydro-engineering evidence at oral hearings, legal cases, and arbitrations; and,
- Health and Safety roles including PSDP and PSCS.

Michael holds an honours degree in Civil and Environmental Engineering from Trinity College Dublin, as well as a research M.Sc. in Wetland Hydrology also from TCD. Michael also holds a diploma in Geology from University College Cork and a second M.Sc. in Applied Hydrogeology, from Newcastle University. Michael is a member of the International Association of Hydrogeologists (IAH) and was a member of the conference sub-committee from 2003 until 2009. He is also a Member of Engineers Ireland (MIEI), a Member of the Chartered Institute of Water and Environmental Management (CIWEM) and a professional member of the Institute of Geologists of Ireland (IGI).

Previous project collaborators have included local authorities, private developers, environmental consultants, architects, civil engineering consultants, and contractors requiring specialist hydrological and hydrogeological expertise. More frequently now we (as the hydro-consultants) form an integral part of the preparation of EIAR and AA/NIS

documents with direct liaison with ecologists and planning consultants and this role also continues through the construction and post construction phases.

David Broderick P. Geo

B.Sc., H. Dip Env Eng, MSc

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Dungarvan,

Co. Waterford.

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david@hydroenvironmental.ie

David Broderick is a Hydrogeologist with 17 years' experience which includes both the public and private sectors. Key areas of expertise are as follows:

- Flood Risk Assessments and flood modelling/hydraulic modelling;
- Assessment of river water quality and assimilative capacity assessments;
- Drainage systems and flood risk assessments, including system design incorporating SuDS drainage features, nature based solutions, water quality mitigations measures and flood attenuations and flood management systems;
- Environmental impact assessment reports (EIARs) for numerous projects including quarries, wind farms, grid connections and national transport and water infrastructure;
- Specialises in soils, geology and hydrogeology EIAR assessments for waste licence applications, including discharge licence applications;
- Water well drilling and site investigation procurement and supervision;
- Water resource assessment and development for public and private schemes;
- Source Protection Zone mapping for groundwater supplies (30+);
- Wetland characterisation and impact assessments for Natura 2000 sites, including restoration options;
- Blanket bog and raised bog hydrological assessments;
- Wind Farms – EIAR peatland drainage and hydrology (55+ Ireland, 10+ N. Ireland);
- Quarry extension dewatering and Environmental Impact Assessments;
- Hydrological and hydrogeological monitoring and modelling;
- Design of stormwater, wastewater and constructed wetland systems including; Integrated Constructed Wetlands as advocated by the DoEHLG;
- Preparation of Water Management Plans; and,
- Health and Safety roles including PSDP and PSCS.

David holds a B.Sc. in Environmental Science, University of Wales, Aberystwyth (2001), as well as a H. Dip. Environmental Engineering, Trinity College Dublin (2004). David also completed a M.Sc. in Hydrogeology at University of Leeds (2006). David is a member of the International Association of Hydrogeologists (IAH). He is also a professional member of the Institute of Geologists of Ireland (IGI).

Having spent two years working in the Geological Survey of Ireland working mainly on groundwater and source protection studies David moved into the private sector taking with him a good understanding of the Irish hydrogeological setting. Early in his career he also worked with wastewater treatment companies carrying out site suitability assessments.

David has particular interest in groundwater resource assessments, quarry dewatering/extensions and flood modelling. David has been involved in key developments for many of the main Irish quarry operators.

He has a strong background in hydrogeological/hydrological investigations in relation to water resources, and source protection area mapping.

Nitesh Dalal
B.Tech., PG Dip., M.Sc.

DOB: 02/06/1995

22 Lower Main Street,
Dungarvan,
Co. Waterford.
Office: 058-44122 Mobile: 089-2125438
nitesh@hydroenvironmental.ie

Nitesh is a recent Environmental Scientist Graduate from U.C.D. His experience to date includes:

- Compilation of geological, hydrological and hydrogeological desk study reports;
- Site walkover surveys and water feature surveys, and drainage mapping;
- Field investigations and peat probing;
- Surface water and groundwater sampling, and surface water flow monitoring;
- Assisting in the preparation of the Land, Soils and Geology Chapters and the Hydrology and Hydrogeology Chapters of Environmental Impact Assessment Reports (EIAR) for several wind farm developments on peatlands;
- Environmental impact assessment chapters (EIARs) and Environmental Reports for numerous project types including wind farms, associated grid connections, small quarries, and infrastructure developments;
- Preparation of Flood Risk Assessments for a variety of proposed developments;
- Water level monitoring and datalogger programming, and water level data management;
- Compilation of hydrological, hydrogeological reports, groundwater risk assessments reports, and WFD Compliance Reports; and,
- Producing method statements, risk assessments, and EHS plans/documents and acting as H&S officer on various sites.

Nitesh holds an M.Sc. in Environmental Science (2024) from University College Dublin, graduating with a Second Class Honours degree in 2024. Nitesh has also completed PG Diploma in Health, Safety and Environment from Annamalai University, India (2021) and B.Tech in Environmental Engineering from Guru Gobind Singh Indraprastha University, India (2016).

Nitesh has assisted in the preparation of the land, soils and geology and water chapters for several wind farm developments on peatlands, including Gannow WF, Coolnagun WF, Lemanaghan WF. Nitesh has assisted in the preparation of WFD Assessment reports and Flood Risk Assessment Reports for Wind Farms, Quarry and Infrastructure Developments.

Current position

1996 to present Managing

Director Whiteford

Geoservices Ltd

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 (EAGE)

Affiliate Member of Institute Of Safety
and Health (MIOH)

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 (MIOH)

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)