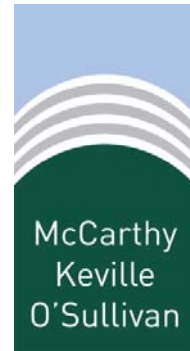




CURRICULUM VITAE

Úna Nealon



Úna Nealon is a Project Ecologist with McCarthy O'Sullivan Ltd. with over 8 years of experience in consultancy, research and conservation management. After gaining a first class honours degree in Environmental Science at NUIG, Úna worked as an Environmental Consultant for OES Consulting where she gained experience in multidisciplinary ecological surveys and impact assessment. In addition, she has held research roles in Tanzania and Madagascar, studying local flora and fauna, and developing conservation management plans. Before joining MKO in June 2016, she completed her PhD with the Centre for Irish Bat Research, examining the impacts of wind farms on Irish bat species. Úna's primary expertise lies in bat ecology, particularly in relation to wind farm EIA. Beyond this, she is a skilled general ecologist, with experience in flora identification, habitat classification, GIS mapping, mammal surveys, Ecological Impact Assessment and Appropriate Assessment. Since joining MKO, Úna has been responsible for managing bat survey requirements for a variety of wind and solar energy planning applications, as well as other commercial, residential and infrastructure projects. This includes scope development, roost assessments, acoustic surveying, sonogram analyses, impact assessment and report writing. Within MKO, she works as part of a multi-disciplinary team to quickly identify potential ecological constraints and to produce EIS Reports, Appropriate Assessment Screening Reports and Natura Impact Statements. Úna is a member of the Irish Ecological Association, Bat Conservation Ireland and is Secretary of Galway Bat Group.

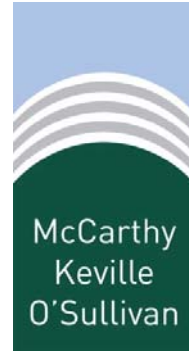
Current Role	Project Ecologist
Qualifications	<ul style="list-style-type: none"> • PhD <i>Systems to predict & assess bat presence at wind turbines in Ireland</i>, UCD (2017) • BSc (Hons) Environmental Science, NUIG (2008)
Years of Experience	<ul style="list-style-type: none"> • 3 years' postgraduate experience as a consultant • 6 years' experience in ecological research & conservation management in Ireland & abroad
Relevant Experience	<p>PhD Researcher, University College Dublin/Queen's University Belfast (2011 – 2016). Designed & implemented the first research project in Ireland examining the impacts of wind energy development on Irish bat populations. Required extensive fieldwork over several years, incorporating standard and novel bat survey methods and GIS mapping.</p> <p>Research Officer, Frontier, Nosy Be, Madagascar (2010 – 2011). Developed and implemented a scientific research programme. Responsibilities included daily organisation of field camp, training and supervision of survey team and local staff, logistics and administration. Employed a variety of ecological techniques to survey mammals, birds, amphibians and reptiles.</p> <p>Ecological Consultant, OES, Tralee Co. Kerry (2008 – 2010). Prepared environmental and ecological impact statements, constraints and feasibility studies. Specifically included habitat mapping, identification of protected plant and animal species and assessment of conservation value. Required consultation with landowners, statutory bodies and conservation groups, attendance at public consultation events and design of control/mitigation measures.</p> <p>EHS Officer, Astellas, Killorglin, Co. Kerry (2008 – 2010). Responsibilities for document control, hazardous and non-hazardous waste management, and on-site waste water treatment. Experience preparing for ISO integrated audits and</p>

	corporate audits as well as reaching Environmental Management Programme targets.
Practical Skills and Aptitudes	<ul style="list-style-type: none"> • Bats – Acoustic sampling, roost assessment, sound analyses • Mammal surveys • Habitat mapping & protected species identification • Invasive species survey • Preparation of maps & management of spatial data using ArcGIS and MapInfo • Preparation of EIS chapters, AA screening reports, NIS, risk assessments, method statements, journal articles, etc.
Management/ Supervision	<ul style="list-style-type: none"> • Project manager on a range of ecological projects, particularly in relation to bats. • Accustomed to working effectively as part of larger multidisciplinary project design teams
Interpersonal & Communication Skills	<ul style="list-style-type: none"> • Consultation with stakeholders including planning authorities, NPWS, Bat Conservation Ireland & other conservation bodies • Attendance at public consultation events. • Delivered oral and poster presentations at national & international conferences including the European Bat Research Symposium, International Mammalogical Congress, Berlin Bat Meeting, Bat Conservation Ireland Conference.
Licenses Held	<ul style="list-style-type: none"> • Full driving licence • SafePass • Manual Handling Cert
Physical / Other	Galway Bat Group Secretary



CURRICULUM VITAE

JULIE O'SULLIVAN



Julie is an Ecologist with McCarthy Keville O'Sullivan. She holds a BSc (Hons) in Biology from University College London and a Masters in Ecological Assessment from University College Cork. Prior to taking up her position in July 2016, Julie gained experience in practical habitat management and developed a range of field skills in plant, habitat, bird and bat surveying through working with several conservation organisations in the UK and Ireland including the RSPB, Cumbria Wildlife Trust and Bat Conservation Trust. Julie has experience surveying birds through her involvement with the RSPB in Northern Ireland. Julie is trained in bat survey, terrestrial invertebrate and freshwater macroinvertebrate sampling and in taking vegetation relevés of vascular plants and bryophytes. She also has experience in habitat identification, habitat mapping, Annex I habitat quality assessment and Phase 1 habitat survey. Since joining MKO Julie has worked on several renewable energy developments, utilising a broad range of bird survey methodologies including vantage point surveys, breeding raptor, adapted brown & shepherd and waterfowl distribution surveys. Julie is also part of a team of bird usage surveyors working on the Shannon/Fergus Estuary. Within MKO Julie is responsible for independently carrying out and planning field surveys in accordance with required Scottish Natural Heritage standards as part of the ornithology team.

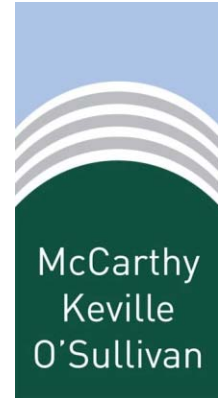
Current Role	Ecologist
Qualifications	<ul style="list-style-type: none"> • MSc. Ecological Assessment, University College Cork, 2014 • BSc. (Hons) Biology, University College London, 2009
Years of Experience	<ul style="list-style-type: none"> • Ecologist / Ornithologist with McCarthy Keville O'Sullivan (July 2016 – present). • Peatland Restoration trainee with the RSPB/Cumbria Wildlife Trust in Cumbria (July - December 2015). • Residential Warden with the RSPB at Portmore Lough in Northern Ireland (January - July 2015). • Intern Ecologist with Westmeath County Council (Sept 2012 - July 2013)
Relevant Experience	<p>Ornithologist with McCarthy Keville O'Sullivan. Responsible for carrying out a wide range of ornithological surveys using methodologies including Brown & Shepherd, O'Brien and Smith, WeBS, vantage point surveys, migratory wildfowl surveys, Hen Harrier roost surveys and wintering bird surveys, in accordance with the relevant SNH guidance and methodologies laid out in Hardy et al. (2013).</p> <p>Peatland Restoration trainee with the RSPB/Cumbria Wildlife Trust, UK. This involved identification and mapping of peatland erosion features remotely using GIS applications and ground truthing in the field using a mobile mapping device. Recording vegetation community, sphagnum species, peat depth and extent of erosion, in order to write management plans. Further conservation work included practical peatland restoration, dry stone walling, hedge laying and working in the juniper nurse, ecological survey of hay meadows, recording vascular plant relevés.</p> <p>Residential Warden, RSPB Portmore Lough, Northern Ireland. Responsible for carrying out bird surveys with the RSPB in Northern Ireland in 2015, including wintering wader and waterfowl counts, Webs survey, breeding wader surveys, Red Kite survey, farmland bird survey. Other ecological survey included an NVC survey of RSPB Portmore Lough nature reserves grassland habitats and recording vascular plant relevés as part of the long-term monitoring of restoration hay meadows.</p> <p>Internship with Westmeath County Council</p>

	Carried out field research and Phase 1 habitat surveys of council owned lands.
Practical Skills and Aptitudes	<ul style="list-style-type: none"> • Experience in carrying out bird surveys in accordance with the relevant SNH guidance and methodologies laid out in Hardy et al. (2013). • Working Independently and effectively in the field. • Proficient in use of MS Office programs and GIS Mapping Software. • Experience in vascular plant identification and habitat surveying.
Management/ Supervision	<ul style="list-style-type: none"> • Experience managing and coordinating large teams of volunteers for the RSPB Futurescapes Project. • Coordination and planning of surveys with ornithology team members.
Interpersonal & Communication Skills	<ul style="list-style-type: none"> • Work as part of a large multidisciplinary team, collating and contributing data for inclusion in EIS. • Experience in environmental education training for the general public, including school children and local community groups. • Writing scientific reports both for research and professionally.
Licenses Held	<ul style="list-style-type: none"> • Full Clean Driving License • Current Safe Pass
Physical / Other	<p>Courses and training attended:</p> <p>Bat Identification Workshop (Bat Conservation Trust, 2010)</p> <p>National Vegetation Classification, Grasslands (Field Studies Council, 2012)</p> <p>Field Identification Skills Certificate (BSBI, 2012)</p> <p>Introduction to QGIS (CIEEM, 2012)</p> <p>Sedge Identification (Cedar, 2015)</p> <p>Mire ecology and sphagnum Identification (Ptyxis Ecology, 2015)</p> <p>Peatland Ecology (Natural England, 2015)</p> <p>Mire ecology (RSPB, 2015)</p>



CURRICULUM VITAE

JOHN HYNES



John Hynes is a Senior Ecologist with McCarthy O'Sullivan Ltd. with 7 years of experience in both private practice and local authorities. John holds a B.Sc in Environmental Science and a M.Sc. in Applied Ecology. Prior to taking up his position with McCarthy Keville O'Sullivan in March 2014, John worked as an Ecologist with Ryan Hanley Consulting Ltd. and Galway County Council. John has specialist knowledge in Flora and Fauna field surveys. Geographic Information Systems, data analysis, Appropriate Assessment, Ecological Impact Assessment and Environmental Impact Assessment. John's key strengths and areas of expertise are in field surveys, project management. GIS and impact assessment. Since joining MKO John has been involved as a Senior Ecologist on a significant range of energy infrastructure, commercial, national roads and private/public development projects. Within MKO John plays a large role in the management and confidence building of junior members of staff and works as part of a large multi-disciplinary team to produce EIS Reports. John has project managed a range of strategy and development projects across the Ireland and holds CIEEM membership

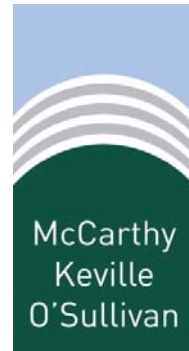
Current Role	Senior Ecologist/Project Manager
Qualifications	M.Sc. (Applied Ecology) (2011) University College Cork B.Sc. (Environmental Science) (2010) National University of Ireland, Galway
Years of Experience	Seven years post graduate experience including experience as GIS Assistant in Local Authority on Western River Basin Project and as Botanical Laboratory Assistant in NUI, Galway.
Relevant Experience	<p>Appropriate Assessment Experience (Selected Projects)</p> <ul style="list-style-type: none"> Ecological services including preparation of method statements , environmental operating plans and ecological supervision for numerous civil engineering projects including: <ul style="list-style-type: none"> Fior Uisce, Ennis, Co Clare. Flood Alleviation Scheme, Method Statement preparation and Ecological site supervisions. Claregalway and Milltown Sewage Schemes, Co Galway, Management plan preparation and Ecological site supervision (2015). Ballyforan Bridge Rehabilitation Works (2014) Ecological Site Supervision Kinvara Sewerage Scheme (stage One) (2016) Invasive Species surveys, management plans and supervision of removal: <ul style="list-style-type: none"> Vartry Water Supply scheme, Callowhill, Co. Wicklow Sites of Primary Care Centres in Wexford, Carrick on Suir and Wexford Site of new school facility in Bray, Co. Wicklow Habitats Directive Assessments (Stage I Screening and Stage II NIS) for numerous projects including: <ul style="list-style-type: none"> Athlone Main Drainage AA Screening and NIS (2016) NUIG, Ecological Impact Assessment and Natura Impact Statement, Proposed student accommodation facilities at Dangan, Co Galway (2015) NUIG, Screening for Appropriate Assessment, Fisheries Field Proposed Road Adjustment (2015) Roscommon County Council, Screening for Appropriate Assessment, Ballindrehid Road Improvements (2014)

	<ul style="list-style-type: none"> • Mayo Co. Council, Screening for Appropriate Assessment, Ground Investigation Works, Proposed Improvement and Realignment of the N26 at Clongullane Bridge (2015) • Ashford Castle Estate, Natura Impact Statement, Boathouse application (2015) <p>Additional Experience (Selected Projects)</p> <ul style="list-style-type: none"> • Office of Public Works, Arterial Drainage Activities 2014-2018. Overseeing and managing the preparation of a habitat mapping GIS database for approximately 500km of channels. • Extensive experience regarding Habitats Directive Assessment and EIS preparation of a number of Windfarm developments, Flood Relief Schemes, Quarry developments, Interpretative center & trail developments and National Road Projects. • Preparing responses to Further Information Requests (FIR) for various planning applications addressing key areas such as impact assessments (habitat loss, disturbance, and displacement), Impacts to Freshwater Pearl Mussel, Impacts to Bats, Impacts to Fisheries and general ecological concerns
Practical Skills and Aptitudes	<ul style="list-style-type: none"> • Botanical surveys including targeted surveys for rare aquatic and terrestrial plant species • Invasive species surveys and management plan preparation • Habitat survey and classification including identification and assessment of Annex I habitats. • Fisheries potential surveys, crayfish surveys • Mammal surveys including Otter, Squirrel & Badger • Bat survey skills including roost inspections, activity surveys, fixed point surveys (Active contributor to the BATLAS Pilot Scheme 2015) • Terrestrial and Aquatic invertebrate sampling and identification including Marsh Fritillary Surveys. • Bird survey and identification; Breeding bird surveys, Wintering bird surveys, habitat suitability surveys, Hen harrier surveys, former Countryside Bird Survey contributor EPA Q value assessment of watercourses • Proficiency with Microsoft Office Suite, ArcGIS, MapInfo Professional. • Extensive habitat mapping and GIS database experience
Management/ Supervision	<ul style="list-style-type: none"> • Project manager and lead ecologist on large scale ecological projects • Extensive experience of construction supervision and monitoring of development sites in Mayo, Clare and Galway over past 4 years. • Four years' experience of lead role on provision of ecological services on projects • Accustomed to working effectively as part of larger multidisciplinary project design teams
Interpersonal & Communication Skills	<ul style="list-style-type: none"> • Extensive experience in successful dealings with statutory ecological consultees including NPWS, Birdwatch Ireland and Inland Fisheries Ireland usually regarding sensitive ecological sites • Significant experience coordinating approach to sensitive ecological sites between client and ecological consultees and on-site contractors, etc. • Development of technical working methodologies on behalf of contractors requiring understanding of both proposed works and sensitivities of site
Licenses Held	<ul style="list-style-type: none"> • Wildlife Act Section 23 & 23 Crayfish - C22/2008, C107/2008, C116/2008, C72/2007, C01/2008, 106/2009. • Wildlife Act Section 22 & 23 Pearl Mussel - C111/2008, 75/2009, 106/2009, C067/2014, C0140/2104, C020/2015, C021/2015.
Physical / Other	<ul style="list-style-type: none"> • Full Clean Driving Licence • Current Safe Pass Holder • Mammal Tracking Workshop (National Biodiversity Data Centre, 2015)



CURRICULUM VITAE

PAT ROBERTS



Pat Roberts is a Senior Ecologist and director of the Ecology team with McCarthy O'Sullivan Ltd. with over 13 years post graduate experience. Pats key strengths include his depth of knowledge and experience of a wide range of ecological, botanical and biodiversity topics. He currently manages the ecological team within MKO and ensures that the outputs from that team are of a very high standard and meet the requirements of the clients and relevant legislation and guidelines. He has worked extensively as an arborist in Ireland, the UK and USA and completed numerous tree surveys with associated tree protection plans

Current Role	Senior Ecologist/Director of Ecology
Qualifications	<ul style="list-style-type: none"> • BTEC N. Dip (Countryside Management) (1995) • B.Sc. (Environmental Science) (2005) National University of Ireland, Galway • Member of Chartered Institute of Ecology and Environmental Management (MCIEEM)
Years of Experience	13 Years
Practical Skills and Aptitudes	<ul style="list-style-type: none"> • In depth knowledge, training and experience in ecological surveying for a wide range of habitats and species including Habitats, Bats, Mammals, Marsh Fritillary, Freshwater Pearl Mussel, Invasive Species, Aquatic Macro-invertebrates • Completion of tree surveys and preparation of tree protection plans in accordance with BS:5837. • Assessment of trees for their ecological value as bat or bird habitat • Over 13 years post graduate experience of providing ecological services in relation to a wide range of developments at the planning, construction and monitoring stages • Excellent understanding of the Appropriate Assessment process and the requirements thereof in relation to plans and projects. • Level of knowledge and experience to provide advice and services tailored to the requirements of the client
Management/Supervision	<ul style="list-style-type: none"> • Director of the Ecology team at MKO with responsibility for ensuring that the outputs from that team are of a very high standard and meet the requirements of the clients and relevant legislation and guidelines. • Overseeing ecological assessments, Appropriate Assessment services and input into EIARs for numerous large scale developments including windfarms, flood relief schemes road projects, amenity, leisure and commercial projects • Overseeing invasive species surveying, treatment and management • Overseeing Ecological Clerk of Work services provided by the company for a variety of clients including Local Authorities, Private Contractors and Irish Water
Interpersonal & Communication Skills	<ul style="list-style-type: none"> • Extensive experience in successful consultation with statutory ecological consultees and other stakeholders including NPWS and Fisheries Boards, usually regarding sensitive ecological sites • Significant experience co-ordinating approach to sensitive ecological sites between client and ecological consultees and on-site contractors, etc.

	<ul style="list-style-type: none"> • Development of technical working methodologies on behalf of contractors requiring understanding of both proposed works and sensitivities of site • Experience in environmental education presentations and training for contractors, clients and the general public, including school children and local community groups
Licenses Held	<ul style="list-style-type: none"> • Wildlife Act Section 23 & 23 Crayfish Keenagh, Parke, Ballina, Crossmolina, Co. Mayo. Frenchpark – Strokestown, Co. Roscommon, Blackwater Catchment Co. Limerick & Co. Cork • Wildlife Act Section 22 & 23 Pearl Mussel – Owentouhy, Co. Galway, River Deel, Co. Mayo, Laghta, Co. Mayo, Loughkip River Co. Galway, Bandon River, Co. Cork, Blackwater catchment, Co. Limerick & Co. Cork. • Birds and Natural Habitats Regulations Derogation Licences for Bats at Cong Co. Mayo and Galway City.
Physical / Other	<ul style="list-style-type: none"> • Full Clean Driving Licence • Current Safe Pass Holder • Chainsaw and Tree Surgery Qualifications • Pesticide Application Qualifications

BARRY O'LOUGHLIN



Barry O'Loughlin is an experienced ecologist with over six years professional experience in the area of ecological consultancy. He holds a B.Sc. in Environmental Science from NUI Galway (2008) and a Masters degree in Applied Ecology, from University College Cork (2010). Prior to joining McCarthy Keville O'Sullivan as Project Ecologist in March 2015, Barry worked as a Senior Project Ecologist in an environmental and engineering firm based in Cork and worked as a project ecologist for over four years in Co. Kerry where he project led and managed a wide range of development led projects including wind farms, overhead and underground electricity transmission projects, quarry and ancillary developments, flood relief schemes, road schemes, etc. He has undertaken extensive habitat surveys and mapping for large scale development led and conservation led projects nationwide.

He possesses a broad range of experience in habitat survey and mapping, flora and bryophyte identification, ornithological survey and monitoring, wetland inventory surveys, peatland assessments, baseline ecological surveys, Geographical Information Systems (GIS), report compilation, mammal surveys, nature conservation studies and ecological monitoring. He is a regular contributor to the Irish Wetland Bird Survey (IWeBS) with BirdWatch Ireland (BWI) and The Irish Hen Harrier Winter Roost Survey with NPWS.

Proposed Role	Project Ecologist
Qualifications	M.Sc. (Applied Ecology) (2010) University College Cork B.Sc. (Environmental Science) (2008) National University of Ireland, Galway.
Years of Experience	Possess five years post graduate professional work experience in consultancy services. Project Ecologist with a private ecological consultancy based in Co. Kerry (2010 – 2014). Senior Project Ecologist with a Cork based environmental and engineering firm (2014 – 2015). Project Ecologist with McCarthy Keville O'Sullivan (MKO) since March 2015.
Relevant Experience	<p>Habitat Surveys</p> <p>Project Ecologist responsible for undertaking a wide range of baseline habitat surveys and mapping for a number of development and conservation led projects nationwide including wind farms, road schemes, overhead and underground powerlines (38kV, 110kV, 220kV and 400kV), quarry developments, mixed use and retail developments, Louth and Kildare Wetland Inventory Surveys (habitat survey and mapping), Kerry Invasive Species Surveys (Pilot Mapping Project for the Lee Catchment). Habitat mapping undertaken in accordance with the Heritage Council's 'Best Practice Guidelines for Habitat Survey and Mapping' (Smith et al. 2011) and habitat classification in accordance with the national habitat classification system in Ireland (Fossitt, 2000). Key competencies include:</p> <p>Nature Conservation, Development led Projects, GIS and Habitat Mapping</p> <p>Responsible for undertaking field surveys and detailed habitat mapping (ArcGIS Version 10.0 & 10.1 and MapInfo software packages Version 10 & 12.5) for the following projects:</p> <ul style="list-style-type: none"> • Louth Wetland Survey (Phase I, II, and III) 2011-2014 • Kildare Wetland Surveys (Phase I, II, and III) 2012-2014

- Sneem Biodiversity Action Plan 2013
- Marsh Fritillary Surveys South and East Ireland 2012
- County Kerry Invasive Species Survey: Pilot mapping study of the River Lee (Kerry) catchment, Tralee. 2011
- Private wind farm developments projects (2010 – Present).
- Overhead and Underground electricity transmission projects (2010 – 2014)
- Quarry projects and ancillary works (2010 – Present)
- Raised Bog Ecotope Surveys and habitat mapping for a private wind farm development located in the midlands region (2013 – 2014).
- Habitat survey and mapping for overhead electricity transmission projects (110kV & 400kV) in Counties Cork, Laois, Kilkenny, Monaghan, Cavan and Meath.
- Habitat survey and mapping of a large scale underground electricity cable route (220Kv) project in Co. Kerry (2014)

Reporting

- Preparation of bird chapters for Environmental Impact Statements (EIS) and Ecological Impact Assessments for proposed wind farm developments and powerline projects nationwide (2010 – Present).
- Collating and reporting desktop information from various datasets and literature sources for impact assessments.
- Preparation of Appropriate Assessment Screening reports and Natura Impact Statements for Special Protection Areas (SPAs) nationwide.

Ecological Impact Assessment (EcIA)

- Preparation of ecology chapters of EIS for proposed wind farm developments nationwide (2010 – Present).
- Preparation of ecology chapters of EIS for proposed overhead 110kV and 400kV powerline projects, Counties Cork, Laois, Kilkenny, Cavan and Monaghan.
- Preparation of Terrestrial Ecology Assessment and Appropriate Assessment Screening Report for proposed 220kV underground cable, County Kerry (2014).
- Ecological Impact Assessments for various wind energy related projects throughout Ireland (2010-Present).
- Ecological Impact Assessment of sewage schemes, County Cork (2015).
- Ecological Impact Assessment for peat harvesting operations (2013).
- Preparation of remedial EIS (Ecology Chapter) for quarry developments in Counties Kerry and Meath (2013-2014).
- Undertaking Appropriate Assessments for Local Area Plans on behalf of Wexford County Council (2014).

Practical Skills and Aptitudes

- Completion of **Geographical Information Systems (GIS)** as a **subject module** for **B.Sc Environmental Science** undergraduate programme with NUIG. Coursework covered all aspects of practical and theory elements of GIS application systems.
- Completion of **Geographical Information Systems (GIS)** as a **subject module** for **M.Sc Ecological Assessment** post-graduate programme with UCG. Coursework covered all aspects of practical and theory elements of GIS application systems.
- Flora Identification Surveys
- Mammal Surveys (with an emphasis on protected species including Badger and Otter) including animal tracks and signs.

	<ul style="list-style-type: none"> • Ornithological Surveys (Winter Waterbirds, Raptors, Coastal, Migratory, Upland Waders, Farmland, etc.) including aural and visual registrations. • Targeted Invasive Species Surveys. • Targeted invertebrate surveys of specialised groups including Kerry Slug and Marsh Fritillary. • Phase I aquatic invertebrate sampling surveys. • Proficient use of ArcGIS software packages including ArcGIS Versions 9.0, 10.0 and 10.1, Filemaker Pro and MapInfo professional version 10.0 and 12.5.
Management/Supervision	<ul style="list-style-type: none"> • Project Management of Flora and Fauna sections for various projects including wind farms, water treatment schemes, ornithological assessments, road schemes, overhead and underground powerlines, quarry projects, etc. • Preparation of ecological scope of works and fee proposals for various tender proposals (wind farms roads, etc.) • Management and co-ordination of all aspects of projects from inception to completion. • Managing, supervising, coordinating and delegating responsibilities to junior staff and sub-consultants (co-ordination of field surveys and reporting).
Working with People & Communication Skills	<ul style="list-style-type: none"> • Responsible for undertaking and implementing landowner communications / engagement strategy and reviewing communication plans for overhead electricity transmission projects in Counties Laois, Kilkenny and Cork. • Undertaking consultation with statutory and non-statutory government organisations including National Parks and Wildlife Service (NPWS), Development Applications Unit (DAU), Bird Watch Ireland (BWI), Irish Peatland Conservation Council (IPCC), etc. • Liaising with clients, local authorities, colleagues, engineers, planners, scientists, etc. progressing a number of development and conservation led projects nationwide
Licenses Held	<ul style="list-style-type: none"> • Full clean driving licence • Current Safe Pass holder • Full Member of the Chartered Institute of Ecology and Environmental Management (MCIEEM).
Selected Publications/Reports	<ul style="list-style-type: none"> • Foss, P.J., Crushell, P., Kirwan, B., O'Loughlin, B. & Wilson, F. (2014) Title: <i>Louth Wetland Survey III. Main Report</i>. Report prepared for Louth County Council and The Heritage Council. • Foss, P.J., Crushell, P., O'Loughlin, B. and F. Wilson (2012). <i>Louth Wetland Identification Survey 2012</i>. Report prepared by Wetland Surveys Ireland for Louth County Council & The Heritage Council. • Crushell, P., Foss, P.J., O'Loughlin, B. and F. Wilson (2012). <i>County Kildare Wetland Survey 2012</i>. Report prepared by Wetland Surveys Ireland for Louth County Council & The Heritage Council. • Foss, P.J., Crushell, P., Wilson, F. and O'Loughlin, B. (2011). <i>Louth Wetland Identification Survey 2011</i>. Report prepared by Wetland Surveys Ireland for Louth County Council & The Heritage Council. • Crushell, P., Foss, P., Hurley, C. and O'Loughlin, B. (2011). <i>County Kerry Invasive Species Survey 2011 - Pilot Mapping Study of the River Lee Catchment</i>. Report prepared by Wetland Surveys Ireland for Kerry County Council.
Physical / Other	<ul style="list-style-type: none"> • Echoes Ecology ornithology workshop, United Kingdom: Advanced Skills for Ornithologists (July 2012).

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- National Biodiversity Data Centre (NBDC): Mammal Survey and Identification (September 2012), Lepidoptera Identification (Butterflies and Damselflies) (June 2013), Invasive Species (July 2010),
 - BirdWatch: IWeBS Survey Techniques Workshop (January 2012 & October 2014), Countryside Bird Survey Workshop (October 2014).
 - Bat Conservation Ireland (BCI): Bat Training Workshop: Survey Methods and Identification (June 2015)
 - Mammals in a Sustainable Environment (MISE): Mammal Identification and Survey (June 2012)
 - Denyer Ecology & Irish Peatland Conservation Council (IPCC): *Sphagnum* Moss Identification (October 2011 & September 2013).
 - Chartered Institute of Ecology and Environmental Management (CIEEM) (Irish Section): Moss Identification Workshop (2013)

CHRIS PEPPIATTE



Chris has over ten years' experience in the preparation of ecological/environmental assessments at more than 50 proposed wind energy development sites in 16 Irish counties (Cavan, Clare, Cork, Donegal, Galway, Kerry, Laois, Leitrim, Limerick, Longford, Louth, Mayo, Roscommon, Tipperary, Tyrone and Westmeath). He has also completed sixteen full EIS ecology chapters for proposed wind energy developments as well as AA scoping/NIS where relevant. In addition, he has wide experience with other types of development, including port extension within SPA (birds, Otter, cetaceans, seals), ferry crossings, roads, electricity powerlines, drainage schemes, water schemes, pipelines and buildings development.

Proposed Role	Ornithologist/Ecologist
Qualifications	<ul style="list-style-type: none"> • NUI Galway, Dept. of Earth and Ocean Sciences. • Diploma (Part-time) Geology. (2006-2008) • Loughborough University, Dept. of Chemical Engineering. • PhD thesis (1997): ' <ul style="list-style-type: none"> • University of Manchester Institute of Science and Technology, Dept. of Chemical Engineering & Dept. of Biochemistry and Applied Molecular Biology. MSc. Bioreactor Systems (Biotechnology) • University of Bristol, Dept. of Botany. • BSc. (HONS) Botany.
Years of Experience	11
Relevant Experience	<ul style="list-style-type: none"> • Has worked on ecological/environmental assessments at more than 50 proposed wind energy development sites in 16 Irish counties (Cavan, Clare, Cork, Donegal, Galway, Kerry, Laois, Leitrim, Limerick, Longford, Louth, Mayo, Roscommon, Tipperary, Tyrone and Westmeath). • Completed sixteen full EIS ecology chapters for proposed wind energy developments as well as AA scoping/NIS where relevant. • Experience with other types of development, including port extension within SPA (birds, Otter, cetaceans, seals), ferry crossings, roads, electricity powerlines, drainage schemes, water schemes, pipelines and buildings development.
Practical Skills and Aptitudes	<p>BIRD WORK EXPERIENCE AND SKILLS</p> <ul style="list-style-type: none"> • Vantage point surveys for birds at wind farm sites, including raptors (Hen Harrier, Golden Eagle, White-tailed Eagle, Common Buzzard, Peregrine, Kestrel, Merlin and Sparrowhawk) and waders/other waterbirds (Golden Plover, Lapwing, Curlew and other waders, Greylag Goose, Greenland White-fronted Goose and Whooper Swan). Collision risk modelling. • Transect surveys for breeding birds (Countryside Bird Survey-type surveys) and upland waders (Golden Plover, Snipe, Curlew etc.). • Licensed tape luring surveys for Red Grouse. • Specialist surveys for breeding Merlin and Hen Harrier winter roosts; Heronry nest count survey; Kingfisher and Dipper surveys; breeding Woodcock surveys. • Surveys of wintering wildfowl and other waterbirds at lakes and other wetland sites. • Experience of Golden Eagle, Hen Harrier, Peregrine, Merlin, Golden Plover, Curlew, Snipe, Redshank, Ringed Plover, Red Grouse,

Whooper Swan, Greylag Goose, Greenland White-fronted Goose and Chough at, or in the vicinity of, proposed wind farm sites.

- Assessment of impacts and recommendation of mitigation measures. Habitat management as mitigation for avoidance by Hen Harrier of areas adjacent to wind turbines.
- Post-construction monitoring and design of corpse-searching monitoring regimes.

BAT WORK EXPERIENCE AND SKILLS

- Bat surveys for wind developments in Cos. Clare, Cork, Galway, Kerry, Limerick, Longford, Mayo, Roscommon and Tipperary. This work has included assessment of sites for likely bat usage, bat activity surveys using heterodyne and time expansion equipment (and the live recording of bats) and the use of static bat recording devices positioned at proposed wind energy sites. Assessment of impacts and recommendation of mitigation measures.
- Assessment of bridges for bats in Cos. Donegal and Galway, including assessments for bridges to be repaired/strengthened to facilitate the construction of wind energy developments.
- Experienced bat worker, including echolocation survey work, demolition and tree felling supervision, bat box monitoring, roost counts etc.
- Scientific agent for a number of bat derogation licences.
- Holder of a general bat handling licence (DoAHG) from 2005 to present.
- Member of the Heritage Council bat panel (Buildings At Risk & Traditional Farm Buildings schemes).
- Experienced with SM3BAT, SM2+, Anabat Express and Anabat SD2 and time expansion recording and analysis.

HABITATS/BOTANICAL EXPERIENCE

- Qualified (BSc level) botanist experience in surveys of vascular plants and bryophytes.
- Experienced in the mapping of habitats and habitat assessment of sites of elements of proposed developments, including more than a dozen wind farm sites.
- Experience of initial habitat mapping of wind farm sites from aerial photographs, followed-up by ground-truthing on site. GIS mapping of habitats on wind farm sites.
- Production of ecological constraints maps, assessment of impacts and recommendation of mitigation measures.

OTHER EXPERIENCE

- Experience of surveys for Freshwater Pearl Mussel, Marsh Fritillary and Kerry Slug at wind farm sites in Ireland.
- Practical experience of aquatic macroinvertebrate survey for Q-value evaluation in water bodies at or near to proposed wind energy development sites.
- Mammal surveys at wind energy sites for Badger, Otter etc.
- White-clawed Crayfish surveys for instream works.

Management/Supervision

Self-motivated

Working with People & Communication Skills	Extensive experience in successful dealings with statutory ecological consultees including NPWS and Fisheries Boards, usually regarding sensitive ecological sites
Licenses Held	<p>National Parks and Wildlife Licences (under Section 35 of the Wildlife Act, 1976 - as amended)</p> <p>Tape lure for Red Grouse</p> <ul style="list-style-type: none"> • C06/2009 Shanakeever, Co. Galway & Slievecallan, Co. Clare. • C08/2009 Corraun, Co. Mayo. • C06/2010 Various sites in Cos. Galway and Clare. • C04/2012 Sites in Cos. Donegal and Leitrim. • 003/2013 Three sites in Co. Mayo. • 013/2013 Two sites in Co. Kerry and one site in Co. Galway. • 008/2014 One site in Co. Donegal. • 015/2015 One site in Co. Cavan. <p>National Parks and Wildlife Licences (under Sections 22, 23 and 43 of the Wildlife Act, 1976 - as amended)</p> <ul style="list-style-type: none"> • Bats- Personal licence (all species, to capture by hand or with handnet) • C86/2005 Rol jurisdiction • C10/2006 Rol jurisdiction • C02/2007 Rol jurisdiction • C65/2008 Rol jurisdiction • C09/2009 Rol jurisdiction • C88/2010 Rol jurisdiction • C118/2011 Rol jurisdiction • C144/2013 Rol jurisdiction • C138/2015 Rol jurisdiction <p>National Parks and Wildlife Licences (under Sections 22, 23 and 43 of the Wildlife Act, 1976 - as amended)</p> <ul style="list-style-type: none"> • Multiple licences for the trapping of White-clawed Crayfish and surveys of Freshwater Pearl Mussel. <p>Electrofishing Authorisation (under Section 18 and the second schedule of the Fisheries Act, 1980)</p> <ul style="list-style-type: none"> • Western Regional Fisheries Board- River Clarin, Athenry, Co. Galway June-August 2005.
Physical / Other	<ul style="list-style-type: none"> • Full Clean Drivers Licence • Safe Pass Certificate

SUSAN DOYLE



Susan is a qualified assistant ecologist with McCarthy Keville O'Sullivan. She completed her primary degree in Zoology at Trinity College Dublin and went on to complete her masters in Ecological Assessment at University College Cork. Susan has extensive field survey skills, including winter and breeding bird survey, bat survey, small mammal survey, terrestrial invertebrate, freshwater macroinvertebrate sampling and animal radiotracking as well as vegetation relevés of vascular plants and bryophytes, habitat identification and mapping. Susan is trained in the ecological applications of GIS, MapInfo and statistics programmes used in the analysis and interpretation of ecological data. She also has experience in Annex I habitat quality assessment, Ecological Impact Assessment and Appropriate Assessment (including Natura Impact Statements).

Proposed Role	Assistant Ecologist
Qualifications	MSc Ecological Assessment, University College Cork, 2014 BA Zoology, Trinity College Dublin, 2013
Years of Experience	2 years post-graduate experience as an ecologist
Relevant Experience	<ul style="list-style-type: none"> • Bird Surveyor: Susan regularly carries out vantage point watch surveys and transect surveys of wintering and breeding birds since September 2015. She has also completed surveys for breeding raptors and waterbirds in the wider surroundings of proposed developments to interpret the significance of the proposed development site in the context of the wider area. Susan also contributed to the annual Countryside Bird Survey in 2016. • Vegetation and habitat survey: Susan has undertaken botanical surveys and habitat identification and mapping for a number of Appropriate Assessment Screenings of proposed developments throughout Ireland since September 2015. • Habitat quality assessment: Susan conducted an ecological baseline habitat quality assessment of Glencullen River Valley in 2014. Using vascular plant relevés and bryophyte quadrats, she analysed the composition and structure of Old Oak Woodland, Petrifying Springs and Alder-Ash Woodland. This information was used to determine if these potential Annex I habitats were of significant ecological value at national and European level. • Field survey planning: Susan used GIS software to plan a field survey of the miniscule Geyer's Whorl Snail (1.9mm in height) in a 16ha fen at Finn Lough, Co. Offaly. She used GIS to map habitats within Finn Lough and overlaid this habitat map with data on calcium-rich regions and water table heights. This analysis determined the optimal areas of Finn Lough to search for individual Whorl Snails and reduced the target search area from 16ha to just 2ha, providing a more efficient and feasible survey. • Bat surveyor: Susan designed and conducted a bat survey of Knocksink Wood during the summer of 2014, using bat detectors to identify population composition and determine activity levels and popular flight paths. In the same year, she was involved in surveying and trapping bats on the River Lee and at Carrighaphooca Castle. • Mammal surveyor: Susan participated in bio-indices surveys for red squirrel in Wicklow Mountains National Park, 2013, for otter in Cork City, 2014, and for badger on Little Island, 2014. • Invertebrate surveyor: Susan sampled the aquatic macroinvertebrate community (including mayfly, stonefly and caddisfly) of Glencullen

	<p>River to assess the impact of Enniskerry Waste Water Treatment Plant on the hydrological quality of the river in 2013.</p> <ul style="list-style-type: none"> • Ecological monitoring: Susan was involved in projects monitoring the migration ecology of Barnacle Geese on the Inishkea Islands in 2015, populations of red-listed Yellowhammer in Kildare farmland in 2014, and migrant Barn Swallow at Pollardstown Fen and Ballynafagh Lake in 2014 and 2015. • Ecology internship: Susan completed an internship with BirdWatch Ireland (2014-2015) in which she collected and analysed ecological information on shorebirds and waders in Dublin Bay. This data will be used by the Dublin Port Company to ensure compliance with ecological regulations during the port's upcoming development and expansion.
Practical Skills and Aptitudes	<ul style="list-style-type: none"> • Proficient in GIS and MapInfo software. • Proficient in statistical analysis programme "R" and MS Office. • Experience in baseline ecological assessment, EclA, AA and NIS. • Training and experience in vascular plant identification and survey. • Training and experience in bryophyte identification and survey. • Experience surveying birds using line transects, vantage point counts, flush counts, mist netting, radio tracking and call identification. • Training in bat surveying and species identification. • Training in terrestrial and aquatic invertebrate sampling. • Training in small mammal survey, trapping and bio-indices.
Management/Supervision	<ul style="list-style-type: none"> • Experience managing field sites and coordinating large teams of volunteers for the Little Tern Conservation Projects 2013 and 2015.
Working with People & Communication Skills	<ul style="list-style-type: none"> • Experience coordinating workloads and delegating tasks as a member of both large teams (10+) and very small teams (3) on a number of different projects, often in challenging fieldwork environments. • Experience as lead author or co-author on technical project reports. • Managed public relations and public outreach for the Little Tern Conservation Project in 2013 and 2015 (including an appearance on RTE series "EcoEye" in January 2016). • A regular contributor to several scientific and conservation blogs and journals.
Licenses Held	<ul style="list-style-type: none"> • Safe Pass, 2016.
Physical / Other	<ul style="list-style-type: none"> • Trainee bird ringer with the British Trust for Ornithology. • Full, clean driving license and experience driving off-road.