
GEORGE FRANCIS SMITH, PHD CECOL MCIEEM

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EMPLOYMENT

May 2011 - present	Independent Ecological Consultant. Blackthorn Ecology
Nov 2006 - May 2011	Senior Ecologist. Atkins, Swords, Co. Dublin
Oct 2006 - Dec 2006	Temporary Lecturer. Dept of Botany, Trinity College Dublin
Mar 2002 - June 2006	Postdoctoral Research Fellow. Dept of Botany, Trinity College Dublin
Mar 1997 - Oct 2006	Freelance Ecological Consultant.
Aug. 1994 - Feb. 1997	Graduate Research Assistant. Dept. of Ecology, University of Tennessee
June 1994 - Aug 1994	Research Technician. Dept. of Forestry, Wildlife and Fisheries, U. Tennessee

EDUCATION

Ph.D. in Botany, Trinity College Dublin, Oct 1998 – Feb 2003
Postgraduate Diploma in Statistics (Honours), Trinity College Dublin, Oct 2000 – May 2001
M.Sc. in Ecology, University of Tennessee, USA, Aug 1994 – Feb 1997
B.Sc. in Biology (Honours), University of Notre Dame, USA, Aug 1989 – May 1993

PROFESSIONAL AFFILIATIONS

Chartered Ecologist (CEcol)
Full Member of the Chartered Institute for Ecology and Environmental Management (MCIEEM)
British Bryological Society – Regional Recorder for Offaly
British Ecological Society
Botanical Society of the British Isles
Dublin Naturalists' Field Club

PROFESSIONAL ACTIVITIES AND SKILLS

- Convenor of CIEEM Irish Section Committee
 - Reviewer for *Journal of Applied Ecology, Forest Ecology and Management, Ecography* and *Biology and Environment*
 - Experienced trainer, public speaker and communicator, including scientific presentations, lectures, training courses, and public talks and field trips with non-specialist audiences
 - GIS software: QGIS, MapInfo, ArcGIS
 - Statistical software: R, PC-Ord, CANOCO
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PROJECT EXPERIENCE

Ecological Impact Assessment (EclA) and Appropriate Assessment (AA)

Carried out as components of Environmental Impact Assessments or as standalone Ecological Assessments for several projects in a variety of ecosystems, including:

- **Agall Quarry:** Remedial EclA of sand and gravel quarry containing populations of two rare plant species, including the Flora Protection Order red hemp-nettle.
- **Ahascragh River Maintenance:** Project manager and lead ecologist for AA and EclA of river drainage maintenance works on the Clonbrock – Ahascragh – Bunowen River system, a tributary of the River Suck Callows SPA.
- **Altnagapple Windfarm:** AA screening of windfarm near Ardara, Co. Donegal on upland blanket bog near SPA designated for Golden Plover and Greenland White-fronted Goose.
- **Annacarty Quarry:** EclA of sand and gravel quarry in south Tipperary adjacent to a fen NHA.
- **Arklow Woodland Survey:** Detailed survey of wet woodlands at site of proposed wastewater treatment plant. Woodland habitat types and conservation value assessed with reference to a number of specialist woodland classification schemes.
- **Ballinasloe Old East Bridge:** Project manager and lead ecologist for AA and EclA of a channel maintenance works potentially impacting the River Suck Callows SPA
- **Ballybeagh and Foylatalure Wind Farms:** EclAs and AAs for two wind farms, electricity substation and associated grid connection routes in Kilkenny in catchment of River Barrow and River Nore SAC
- **Ballyman Glen:** AA screening for rail bridge adjacent to SAC containing petrifying springs priority habitat.
- **Carrickeeny Windfarm:** Project manager and lead ecologist for AA screening in north Leitrim.
- **Cartron Quarry:** Remedial EclA for gravel quarry in Offaly
- **Cavan Quarries:** Habitat and botanical surveys for two proposed quarry expansions in Co. Cavan
- **Cavan Three Roads Project:** Project manager and lead ecologist for EclAs of Cavan town relief road. Ecological surveys of relief roads in Bailieborough and Ballyconnell. Key issues included protected newt population and interdrumlin wetland complex.
- **Corries Cross Waste Facility Permit:** Review of permit application, highlighting shortcomings under Natural Habitats Regulations 2011 and Freshwater Pearl Mussel Regulations 2009.
- **Courtmacsherry Marina:** EclA and AA of marina located within SAC and SPA containing rare coastal species and embryonic dunes
- **Crinkill Residential:** Project manager for EclA of housing development near Birr, Co. Offaly; key issues were bats and riparian corridor wetlands.
- **Curraheen and Kill Hill Windfarms:** EclAs and AAs for 13 and 6 turbine windfarms in south Tipperary. Key issues included Lower River Suir SAC, bats and birds.
- **Derrymullen Flood Protection Barrier:** Project manager and lead ecologist for AA and EclA of a flood protection barrier potentially impacting the River Suck Callows SPA.
- **Dominick Street Development:** AA of mixed use development in Dublin City.
- **Dun Laoghaire Tree Surveys:** Series of three surveys of street trees in Dun Laoghaire – Rathdown following BS 5837 standard methodology.
- **Dundalk Retail Phases 2B & 3:** Lead ecologist for EclA and AA for retail development adjacent to saltmarsh in Dundalk Bay SAC/SPA.
- **Dunmore Wind Farm:** AA for wind farm in Louth, focusing on potential impacts to River Boyne and River Blackwater SAC



- **Edenderry Walking Route:** EclA of walking route along Grand Canal, Edenderry, Co. Offaly.
- **Finea Quarry:** Project ecologist for EclA and AA of sand and gravel quarry in Westmeath adjacent to raised bog SAC and occupied by significant badger population.
- **Glenduff Windfarm:** Project manager and lead ecologist for ecological and noise assessments for 6 turbine windfarm in Limerick. Key constraints include proximity to Hen Harrier SPA and tributaries of designated river corridors.
- **Glenties and Ballybofey Windfarms:** Project manager and lead ecologist for EclAs and AAs for four windfarm sites in Donegal with a proposed total of 38 turbines. Issues include upland peatland habitats, proximity to designated rivers and birds.
- **Gortnahalla Wind Farm:** AA for wind farm in Tipperary in catchment of Lower River Suir SAC
- **Island Strand Intake:** EclA for mixed use development and wastewater treatment plant in Clonakilty, Co. Cork. Key issues included location in SAC and SPA, coastal lagoon and orchid-rich wet grassland.
- **Kildorragh Mushrooms AA:** AA of mushroom growing facility in Cavan.
- **Kill Hill Grid Connection:** EclA and AA screening of electricity substation near Cashel, Co. Tipperary.
- **Killykeen Forest Park:** EclA for expansion of forest park recreational development near Lough Oughter SPA in Cavan
- **Kiskeam Bridge:** AA screening of footbridge over Owentaraglin River, part of Blackwater River SAC.
- **Lisdowney Windfarm:** AAs of windfarm and grid connection route in Kilkenny in River Barrow and River Nore SAC catchment. Key issue was mitigation for Nore freshwater pearl mussel.
- **Lower Drumcondra Road Development:** AA of mixed use development in Dublin City.
- **N24 Cahir to Clonmel:** Review of EclA and resurvey of habitats and mammals for road realignment
- **N72 Barraduff Scheme:** EclA and AA of road realignment in south Kerry, located within SAC. Other key issues included badger setts, otter and invasive plant species.
- **North Cork Road Schemes:** Project manager and lead ecologist for EclAs and AAs for two relief roads in Millstreet and Kanturk crossing the River Blackwater SAC.
- **Portlaoise Southern Orbital Route:** Project manager and lead ecologist for EclA for relief road. Key issues included pNHA with esker grassland and woodland.
- **Pottery Road Realignment:** EclA for realignment of an urban road. Key issues included remnant ancient hedgerow.
- **RI 07 Malahide Road Realignment:** AA, EclA and SEA for road network realignment in north Dublin upstream of Baldoyle Bay SAC and SPA. Other issues included old estate woodland and remnant hedgerows.
- **Rahinmore Quarry:** AA for substitute consent for gravel quarry adjacent to esker SAC
- **Redan House Botanical Survey:** Detailed botanical inventory and vegetation survey of proposed housing development in Dalkey Coastal Zone NHA.
- **Sligo Western Distributor Road:** EclA for suburban relief road southwest of Sligo town.
- **St Louis Grammar School:** EclA and sustainable buildings (BREEAM) assessment for a school redevelopment in Co. Down. Recommendations to retain old woodland and create new local Biodiversity Action Plan priority habitats were incorporated into design.
- **Tibradden Wood Adventure Course:** EclA for high wire adventure course in Dublin Mountains located in Scots pine forest; threatened red squirrel population a key issue.
- **Tomduff Windfarm Appeal:** Review of windfarm planning application in Carlow, highlighting shortcomings in bird & other assessments and water quality mitigation for freshwater pearl mussel
- **Westcourt House:** Ecological assessment of ruined estate in Kilkenny to support amenity development



Ecological Supervision of Works

Supervision of construction works to ensure compliance with environmental legislation and planning conditions.

N6 Galway – East Ballinasloe. Contractor's Representative, conducted surveys of ecologically sensitive features, including the protected small white orchid, River Suck cSAC, white-clawed crayfish, limestone pavement, semi-natural grassland, bogs and native woodland. Prepared small white orchid management plan and overall ecological design plan. Reviewed mammal mitigation and liaised with National Parks and Wildlife Service.

N2 Castleblaney-Clontibret Realignment. Employer's Representative, monitored ecological mitigation works during the construction phase. Key issues included a wetland complex on cutover bog, maintenance of water quality and badger underpasses.

Derrymullen Flood Protection Barrier. Employer's Representative, monitored ecological mitigation during works in River Suck Callows SPA. Included liaison with National Parks and Wildlife Service, review of method statements, toolbox talk and site inspections. Key issues were water quality mitigation and site rehabilitation.

R675 Tramore Road: Employer's Representative, supervised ecological mitigation for road improvement through Kilbarry Bog pNHA.

Ballinasloe Old East Bridge. Employer's Representative, monitored ecological mitigation during works adjacent to River Suck Callows SPA. Included liaison with National Parks and Wildlife Service, toolbox talk and site inspections. Key issue was water quality mitigation.

N7 Nenagh – Castletown: Contractor's Representative, carried out assessments of ecologically sensitive areas and identified ecological features for mitigation prior to site clearance. Participated in ecological design of route.

Strategic Ecological Survey

Ecological surveys to inform conservation and management planning for biodiversity and Green Infrastructure.

Best Practice Guidance for Habitat Survey. Lead author of *Best Practice Guidance for Habitat Survey and Mapping* prepared for the Heritage Council, covering field survey, GIS, project planning and management, and preparation of final reports and habitat maps.

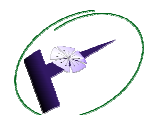
Waterways Ireland Canal Surveys 2014. Carried out habitat survey and complete botanical inventory of 62.1 km of canals and canal-bank, including the Grand Canal Barrow Line and parts of the Royal Canal. Prepared GIS database of habitats, rare species, invasive species and Ecologically Sensitive Areas.

Heritage Audit of the River Nore, Phases 2 & 3. Project ecologist in collaboration with built and cultural heritage specialists for heritage surveys and audit of the River Nore corridor from Kilkenny downstream to the county boundary. Desk and field surveys and consultations were used to identify and map using GIS critical natural heritage elements and Green Infrastructure along the river corridor.

Mayo Habitat Surveys. Project manager for habitat mapping, survey and conservation evaluation of 114 km² in Co. Mayo centred on towns and rural hinterland. Identified 36 Local Biodiversity Areas and ecological corridors and developed management recommendations in a final GIS database of habitats and report.

Raised Bog Monitoring Project 2012. Participated in monitoring conservation status of Annex I raised bog habitats; work included field survey and mapping, site level assessment of conservation status and restoration potential, and reporting.

Meath Woodland and Hedgerow Survey. Project manager and lead ecologist for hedgerow field survey and assessment and woodland inventory for all of Co. Meath. Field surveys of woodlands and old parkland were used to supplement existing datasets in the creation of a single woodland GIS database.



River Dodder Ecological Survey. Carried out ecological survey and mapping of River Dodder corridor and Kiltipper Park, produced GIS database of habitats and species, and provided recommendations for conserving and enhancing biodiversity.

Kilkenny City Green Infrastructure Survey and Mapping. Project manager for ecological survey and mapping of habitats and Green Infrastructure of Kilkenny City and Environs. Particular attention was paid to recording invasive species and recommendations on managing and expanding multiple functions of Green Infrastructure.

National Survey of Native Woodlands. Collaborated on study design for the initial phase of the national scale NPWS survey. Subsequently conducted botanical and forest ecology field surveys of a large range of native woodlands in Galway and Clare.

Sugar Loaf Landscape Assessment. Project manager for multidisciplinary assessment of the Sugar Loaf Mountains, Co. Wicklow to inform management of natural and cultural heritage in conjunction with amenity, farming and forestry use. Produced GIS mapping of habitats, landscape classes and cultural heritage features, proposed Special Amenity Area boundaries, and assessed amenity opportunities and threats.

Toon Valley NHA Survey. Field survey of 260 ha of woodland and bog complex near the Gearagh in west Cork to be proposed as a new Natural Heritage Area. Included QGIS-based habitat mapping using National Survey of Native Woodland classification and mapping recommended NHA boundaries.

Waterford Ecological Networks. Collaborated in desktop mapping and evaluation of ecological corridors for protected mammals over Co. Waterford. Combined and analysed several existing datasets in QGIS and assessed the value of different habitat/landcover types for different mammal species. Recommended measures to conserve and strengthen county-scale corridors.

Woodlands Monitoring Project. Participated in monitoring conservation status of Annex I woodland types old oak woodland and alluvial woodland for NPWS.

Sand Dunes Monitoring Project. Participated in monitoring conservation status of 10 Annex I coastal habitats associated with sand dunes for NPWS in 2011 and 2012.

Kerry Habitat Surveys. Lead ecologist for habitat mapping, survey and conservation assessment of four towns and environs in Kerry. Provided recommendations on habitat creation and management, especially control of invasive exotic plants.

Ecosystem Restoration and Management

Projects focusing on management, restoration or creation of ecosystems to conserve and enhance biodiversity.

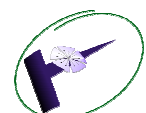
Offaly Community Biodiversity Project. Led a multi-disciplinary biodiversity audit and habitat mapping of 7 Offaly towns, liaised with and raised awareness of local communities, and prepared biodiversity management plans for Tidy Towns groups.

Midlands Amenity Park. Specialist ecological advice on voluntary basis for local group developing amenity park in and adjacent to a turlough in Westmeath. Includes detailed botanical surveys, advising on development and landscaping works, providing information for education and interpretation, and developing a conservation management plan.

Cavan Smooth Newt Habitat Creation. Project manager and lead ecologist in creating breeding pond and terrestrial habitat for smooth newt. Translocated vegetation, refugia and 70 newts from donor pond to be lost to development to new habitat. Breeding newts confirmed in new pond the following year.

Irishtown Nature Park Biodiversity Management Plan. Project manager and lead ecologist for preparation of a biodiversity inventory and management plan of nature park on former Ringsend Dump, Dublin City. Management plan focused on enhancing biodiversity, amenity and educational potential.

Native Woodland Scheme. Qualified ecologist under the NWS. Carried out ecological assessments and contributed to NWS plans for establishing native woodland in sites in Wicklow and Louth under Element 2 of the scheme.



Fingal Historic Bridges. Project manager for ecological component of built and natural heritage assessment of old stone bridges in Fingal County Council Area. Produced guidance on maintaining natural heritage value of bridges and surrounds while carrying out required works to conserve cultural heritage and structural integrity.

N6 Galway – East Ballinasloe. Completed detailed design of compensatory wetlands along the Dooyertha River and calcareous grassland translocation to create habitat for the protected small white orchid.

North Midlands Botanical Surveys. Project manager and lead ecologist for detailed studies of three NPWS designated woodland sites including St. John's Wood. Used multivariate data analysis to inform recommendations for site management, including experimental coppice management and impact assessment of proposed walking route on the rare *Pyrola rotundifolia*.

Lower River Suir Wetland Creation. Designed created wetlands adjacent to River Suir estuary. Freshwater and brackish wetland design was informed by baseline soil, topographical and botanical surveys, including resurvey of known *Hordeum secalinum* populations.

Portrane Residential Development. Assessed coastal habitats in context of planning application for development in Portrane, Co. Dublin. Proposed specific sand dune restoration works for habitat restoration and coastal protection.

Kilbarry Bog Management Plan. Collaborated in preparation of management plan and wetland habitat creation design for Kilbarry Bog pNHA, Waterford.

Policy and Research

BIOFOREST Project. Post-doctoral researcher from 2002-2006 with primary responsibility for plant ecology research in multidisciplinary study of biodiversity in forestry plantations.

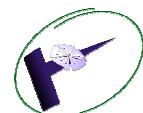
- Supervised research assistant and postgraduate and undergraduate students.
- Designed field survey protocols, led field surveys, analysed data, interpreted results and developed research applications.
- Produced papers, presentations and reports and participated in occasional ecology presentations to students.
- Main outputs included:
 - Indicators of biodiversity in conifer plantations, broadleaf plantations and grassland and peatland habitats proposed for afforestation
 - Recommendations for enhancement of biodiversity in forestry plantations and maintaining biodiversity in open habitats.

CoillteNATURE Project. Prepared draft revisions of High Conservation Value Forest (HCVF) and forest Biodiversity Area (BA) concepts for sustainable forest management under Forest Stewardship Council principles. Developed and field tested criteria and quantitative indicators for HCVFs and BAs for use by foresters. Used GIS-based approach to apply revised definitions, criteria and indicators to Coillte Midlands District forest estate on pilot basis.

High Nature Value Farming Case Studies. Project manager and lead ecologist for case studies of farming and biodiversity in the Aran Islands and Connemara. Key outputs were recommendations for measures to identify and support HNV farming in the case study areas and Ireland, particularly how to maintain extensive farming practices that support biodiversity.

Biodiversity of Lake Islands in Lough Ree. Project manager and lead ecologist for study of the plant ecology and biogeography of wooded lake islands in Lough Ree. Key outputs were quantitative analysis of environmental and geographic factors influencing island vegetation composition and biodiversity.

Restoring Native Woodlands to Former Conifer Plantations. PhD research project investigating the feasibility of restoring native upland oak woodland to clearfelled conifer plantations. A series of 23 permanent plots were established in Wicklow Mountains and Killarney National Parks. Experimental variables included grazer exclusion, vegetation control, and planted species (sessile oak and birch mix vs. pure oak). Tree survival



and growth, vegetation succession and natural tree regeneration were studied in detail. Plots were resurveyed in 2010 as part of an MSc project.

Food Harvest 2020. Prepared strategic assessments of the potential impacts on biodiversity from Food Harvest 2020 agricultural productivity targets for tillage, forestry, organic and bioenergy crop sectors. Subcontracted to Atkins.

Short Rotation Willow Coppice Impacts. Desktop research on ecological impacts of growing willow for biomass and review of feasibility of SRC willow cultivation on cutover bog.

River Slaney SAC Appeal. Habitat survey and mapping and botanical inventory to support a boundary appeal for the River Slaney SAC. Represented landowner at appeals board meeting and secured removal of lands of low conservation interest from SAC.

Subalpine Forest Change After Invasive Insect Infestation. Carried out or participated in a series of related projects studying changes to southern Appalachian subalpine forests following decimation of Fraser fir populations by an invasive exotic insect pest. Studied tree regeneration, role of atmospheric pollution and coarse woody debris dynamics and made management recommendations in report to US National Park Service.

Coastal Forest Succession Post-Hurricane. Completed research on coastal forest recovery in South Carolina following destruction by Hurricane Hugo and controlled fires to reduce fuel loading.

Training and Teaching

Completed CIEEM Train the Trainer course tailored for ecologists in 2014.

Introduction to Ecological Mapping with Open Source GIS. Provided 2-day CIEEM training course in 2013-2015 on using open source GIS (QGIS) for ecological mapping. Topics included GIS basics, using QGIS software, sourcing environmental data, creating and editing spatial data, querying and manipulating data, and making and presenting maps.

Identiplant Course Tutor. Tutor in 2014 for Botanical Society of British Isles and Field Studies Council supported course in field identification of vascular plants <http://www.identiplant.co.uk/>.

Clara Bog Bryophyte Course. Provided a 1-day training course for NPWS rangers and education staff on identification and conservation importance of *Sphagnum* and other bryophytes in Clara Bog.

Kildare County Council AA Seminars. Conducted a series of seminars for Kildare County Council staff on Appropriate Assessment and Annex IV protected species, focusing particularly on AAs for wastewater treatment plants.

Habitat Survey and Mapping. Lecturer in 2010-2014 for Trinity College MSc course in Biodiversity and Conservation and in 2013-2014 for University College Cork Environmental Impact Assessment module. Lectures covered preparing for and carrying out habitat survey and mapping and habitat evaluation.

Introduction to Statistics. Taught 3rd year undergraduate statistics course in Michaelmas Term 2006 for Trinity College Environmental Science and Botany programme as maternity leave cover. Course sessions began with introductory lectures, followed by interactive practical demonstrations with a strong e-learning component.

Native Woodland Scheme Training Course. Lecturer at initial Forest Service NWS training course for foresters and ecologists.

PUBLICATIONS

Books and Published Reports

Smith, G.F., P. O'Donoghue, K. O'Hora and E. Delaney (2011) *Best Practice Guidance for Habitat Survey and Mapping*. Heritage Council, Kilkenny.



Iremonger, S., J. O'Halloran, D.L. Kelly, M.W. Wilson, **G.F. Smith**, T. Gittings, P.S. Giller, F.J.G. Mitchell, A. Oxbrough, L. Coote, L. French, S. O'Donoghue, A.-M. McKee, J. Pithon, A. O'Sullivan, P. Neville, V. O'Donnell, V. Cummins, T.C. Kelly and P. Dowding (2007) *Biodiversity in Irish Plantation Forests*. ERTDI Report Series No. 51. Environmental Protection Agency, Johnstown Castle.

Contributor to: Helms, J.A. (ed) (1998) *The Dictionary of Forestry*. Society of American Foresters, Bethesda, Maryland, USA.

Journal Publications

Smith, G.F., P. O'Donoghue and C. O'Brien (2011) Sustaining High Nature Value farming systems: lessons from the west of Ireland. *In Practice* 71:22-25.

Smith, G.F., T. Gittings, M. Wilson, L. French, A. Oxbrough, S. O'Donoghue, J. O'Halloran, D.L. Kelly, F.J.G. Mitchell, T. Kelly, S. Iremonger, V. O'Donnell, A.-M. McKee, P. Giller (2008) Identifying practical indicators of biodiversity for stand-level management of plantation forests. *Biodiversity and Conservation* 17: 991-1015.

French, L.J., **G.F. Smith**, D.L. Kelly, F.J.G. Mitchell, S. O'Donoghue, S.F. Iremonger and A.-M. McKee (2008) Ground flora communities in temperate oceanic plantation forests and the influence of silvicultural, geographic and edaphic factors. *Forest Ecology and Management* 255: 476-494.

Buscardo, E., **G.F. Smith**, D.L. Kelly, H. Freitas, S. Iremonger, F.J.G. Mitchell, S. O'Donoghue and A.-M. McKee (2008) The early effects of afforestation on biodiversity of grasslands in Ireland. *Biodiversity and Conservation* 17: 1057-1072.

Smith, G.F. (2008) *Epilobium pedunculare* A. Cunn. (Rockery Willowherb) new to Co. Laois. *Irish Naturalists' Journal* 29: 49-50.

Coote, L., **G.F. Smith**, D.L. Kelly, S. O'Donoghue, P. Dowding, S. Iremonger and F.J.G. Mitchell (2007) Epiphytes of Sitka spruce (*Picea sitchensis*) plantations in Ireland and the effects of open spaces. *Biodiversity and Conservation* 16: 4009-4024.

Smith, G.F., S. Iremonger, D.L. Kelly, S. O'Donoghue and F.J.G. Mitchell (2007) Enhancing vegetation diversity in glades, rides and roads in plantation forests. *Biological Conservation* 136: 283-294.

Oxbrough, A.G., T. Gittings, J. O'Halloran, P.S. Giller and **G.F. Smith** (2005) Structural indicators of spider assemblages across the forest plantation cycle. *Forest Ecology and Management* 212: 171-183.

Smith, G.F. and N.S. Nicholas (2000) Size and age class distributions of Fraser fir following balsam woolly adelgid infestation. *Canadian Journal of Forest Research* 30: 948-957.

Smith, G.F. and N.S. Nicholas (1999) Post-disturbance spruce-fir forest stand dynamics at seven disjunct sites. *Castanea* 64: 175-186.

Smith, G.F. and N.S. Nicholas (1998) Patterns of overstory composition in the fir and fir-spruce forests of the Great Smoky Mountains after balsam woolly adelgid infestation. *American Midland Naturalist* 139: 340-352.

Smith, G.F., N.S. Nicholas, and S.M. Zedaker (1997) Succession dynamics in a maritime forest following Hurricane Hugo and fuel reduction burns. *Forest Ecology and Management* 95: 275-283.

Conference Proceedings

Wilson, M.W., T. Gittings, J. O'Halloran, **G.F. Smith**, A. Oxbrough, S. O'Donoghue, L. French, P.S. Giller, S. Iremonger, J. Pithon, D.L. Kelly, F.J.G. Mitchell, T.C. Kelly, P. Dowding, A. O'Sullivan, P. Neville, A.-M. McKee and L. Coote (2005) Forestry and biodiversity in Ireland and a case study of the Hen Harrier (*Circus cyaneus*): BIOFOREST project. In E. Hendrick, ed. *Forest Research and Development in Ireland 2004-Underpinning Industry Development*, pp 35-39. COFORD, Dublin.



O'Halloran, J., T. Gittings, **G.F. Smith**, M. Wilson, A. Oxbrough, S. O'Donoghue, L. French, P.S. Giller, S. Iremonger, J. Pithon, D.L. Kelly, F.J.G. Mitchell, T.C. Kelly, P. Dowding, A. O'Sullivan, P. Neville, A.-M. McKee and L. Coote (2004) Biodiversity of plantation forests in Ireland: BIOFOREST project. In L. MacLennan, ed. *Opportunities for Biodiversity Enhancement in Plantation Forests*, pp 29-38. COFORD, Dublin.

Smith, G.F., D.L. Kelly, and F.J.G. Mitchell (2003) Establishing native woodlands in former upland conifer plantations in Ireland. In J. Humphrey, A. Newton, J. Latham, H. Gray, K. Kirby, E. Poulson and C. Quine, eds. *The Restoration of Wooded Landscapes*, pp 37-46. Forestry Commission, Edinburgh.

