

An Evaluation of IRD DuhallowLIFE+

**Project No. LIFE09 / NAT /IE/000220
Blackwater SAMOK**



Covering the period 01/09/2010 to 01/06/2015

**Report Date
12/06/2015**

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Section 2: Key Terms, Abbreviations & List of Annexes

DuhallowLIFE	The adopted project name of the EC funded LIFE+ Project (LIFE09 / NAT /IE/000220) <i>'Restoration of the Upper River Blackwater SAC (Special Area of Conservation) for the Freshwater Pearl Mussel, Atlantic Salmon, European Otter and Kingfisher'</i> - Blackwater SAMOK
Project Actions	The listed actions (work tasks) as set out and agreed in the Grant Agreement with the EC which collectively form the work programme to be implemented by DuhallowLIFE.
Coordinating Beneficiary	The lead partner and Project Sponsor with the EC LIFE+ project is IRD Duhallow
Associated Beneficiary	The associated partners working with IRD Duhallow in the DuhallowLIFE project which are Inland Fisheries Ireland and Pobal (Rural Social Scheme)
Project Supporters	Term used to describe third party supporters of DuhallowLIFE that had no direct day to day involvement in the implementation of the Project Actions, but who were involved in various aspects of the project – they included the Dept. of Agriculture, EPA, TRAP, Teagasc, local angling bodies and 3 rd level institutes.
Project Team	The personnel who were directly involved in the implemented DuhallowLIFE including- Pat Fitzgerald (initial Coordinator from June 2010 to November 2011) Dr Fran Igoe (Scientific Coordinator from June 2009 to November 2011 and Project Coordinator from November 2011 to June 2015), Mr Kieran Murphy (Project Officer from June 2012 to June 2015) and Nuala Riordan (Project Administrator from October 2012 to June 2015).

Abbreviations

EC	European Commission
LIFE	LIFE is the EU's financial instrument supporting projects throughout the EU
RSS	Rural Social Scheme
IRD	Integrated Rural Development
IFI	Inland Fisheries Ireland (Component Authority)
NPWS	National Parks and Wildlife Service (Component Authority)
OPW	Office of Public Works (Drainage Authority)
EPA	Environmental Protection Agency
FPM	Freshwater Pearl Mussel
NBDC	National Biodiversity Data Centre
ICMSA	Irish Creamery and Milk Suppliers Association
IFA	Irish Farmers Association
Teagasc	Irish Food & Agricultural Advisory Authority
TRAP	Territories of Rivers Action Plans (TRAP) – a project bringing together river basin and landscape protection, with regional growth models and solutions.
AA	Appropriate Assessment
CEO	Chief Executive Officer
UCC	University College Cork
UCD	University College Dublin
TIT	Tralee Institute of Technology

Section 3: Executive Summary

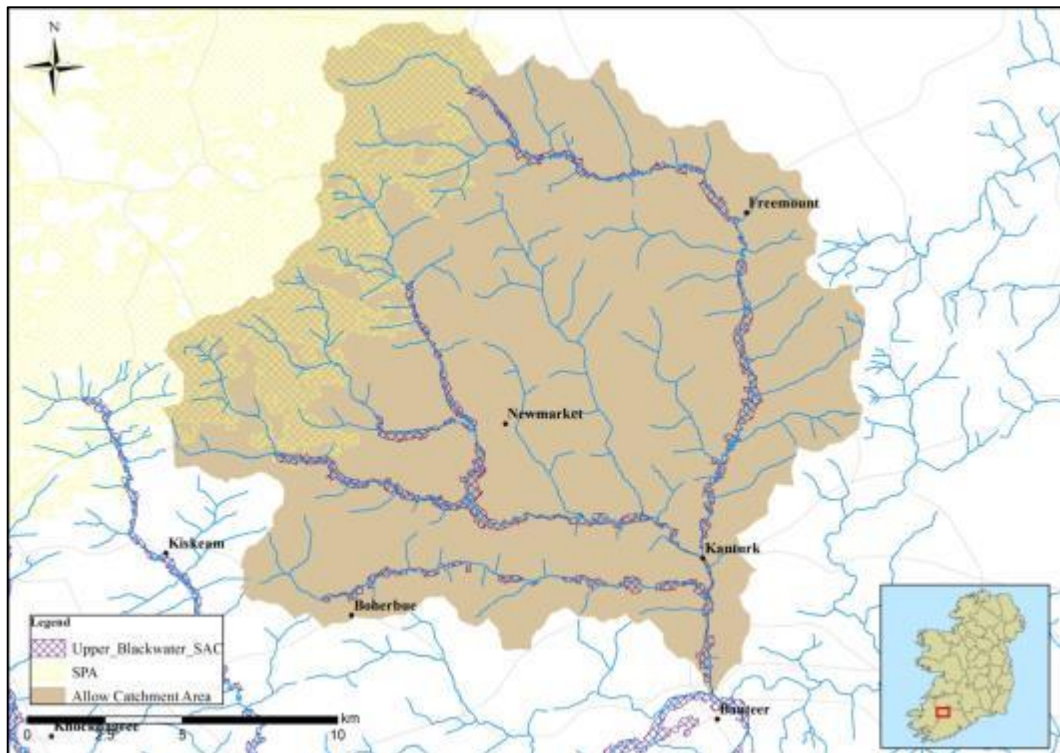
3.1 Background and Land Use Patterns

The IRD Duhallow LIFE+ Project (LIFE09 / NAT /IE/000220) '*Restoration of the Upper River Blackwater SAC (Special Area of Conservation) for the Freshwater Pearl Mussel, Atlantic Salmon, European Otter and Kingfisher*', focused on the upper Blackwater River, and specifically on the Allow River catchment. This catchment which covers an area of approximately 310km² (Map No. 1) covers parts of counties Cork and Limerick in the South West of Ireland. There are three major rivers that drain the catchment, namely the Allow, Dalua and Brogeen. The work of the LIFE+ project was focused primarily in the Allow River. The entire catchment is characterised by a land use pattern where improved agricultural grasslands or pasture predominate to support dairy and suckler farming. The upper reaches of the catchment are characterised by more traditional farming practices with mixed agricultural land use and forestry predominating. The nature of farming practices and the goodwill of the local farming communities were important contextual elements of the work of the project and the species which the LIFE+ project set out to target.

The awarding of LIFE funding to IRD Duhallow in 2010 marked a new era in the conservation of Freshwater Pearl Mussel, Atlantic Salmon, Otter, Kingfisher and Dipper on the River Allow, a tributary of the River Blackwater SAC. The project objectives focused on these species which were deemed to be integral to the conservation status of the river and consequently key project actions were focused on the requirement for high quality water status for the targeted species to survive. Therefore, a key project objective was to bring about a sustained enhancement of the river bed and the riparian zone. The project set out to achieve this through bottom-up engagement with all stakeholders with an interest in the river and for all to work together in an integrated catchment management approach. This was designed to highlight the importance of the river to all parties and the role that each could play in its future conservation. A significant project objective, which was essential to ensure the overall success of the main conservation actions, was focused on creating an awareness of the river to local communities and promoting a sense of "community ownership" of the river. Work in this regard was focused on local media work, targeting school students and their teachers and local community engagement. All of this work was designed to enhance and highlight the importance of river eco-systems for current and future generations and for local communities to take ownership of the river.

3.2 Geographical Focus and Target Species

The River Allow catchment, which includes the Allow, Dalua, Brogeen, Glenlara and the Owenkeale rivers, forms part of the internationally renowned River Blackwater spanning counties Cork and Waterford. This SAC forms part of the Natura 2000 Network (Site code: 002170) and the upper tributaries provide important habitats for freshwater pearl mussel *Margaritifera margaritifera*, Atlantic salmon *Salmo salar* and European otter *Lutra lutra*, all of which are listed in the Annex II of EU Habitats Directive. Together with kingfisher, these three species were the primary focus of the work programme of the IRD Duhallow LIFE+ Project and the area of operation also marked the geographical extent of the work of IRD Duhallow.



Map No. 1 Location of River Allow catchment area and insert map of Ireland

3.3 Relationship with the National Parks and Wildlife Service

The project was officially launched in early July 2011 by the then Irish Minister for Environment, Community and Local Government, Phil Hogan T.D, who is now the EU Commissioner for Agriculture. The project launch took place in IRD Duhallow's headquarters, the James O'Keeffe Institute, in Newmarket, Co. Cork. The event bore many of the hallmarks of a very successful launch with a broad range of local and national stakeholders in attendance. While this auspicious start to Duhallow LIFE+ was extremely successful, it masked underlying difficulties with aspects of the project which would negatively affect delivery. The difficulties, which predominately related to the relationship between the coordinating beneficiary and the national component authority, namely the National Parks and Wildlife Services (NPWS), were already in existence and visibly apparent, in the non-attendance of senior representatives of the NPWS as the Minister raised the LIFE flag to mark the official launch of the project. Given that the NPWS were the competent authority for three out of the four species which the restoration of the Upper River Blackwater Special Area of Conservation was targeting, namely for the freshwater pearl mussel, Atlantic salmon, European otter and kingfisher, the need for a good working relationship from the outset of the project was critical.

The history and background to this working relationship is unclear and outside the scope of this evaluation. What is clear however, is that effects of the poor relationship between the coordinating beneficiary and the NPWS were most pronounced with respect to the LIFE project's work on freshwater pearl mussel. The stated aim of the

DuhallowLIFE+ project was to physically restore the River Allow closer to “good ecological status” from the degraded state it was in at the time of the project application. Unfortunately, the poor relationship between the coordinating beneficiary and the NPWS did not allow for the full implementation of a more comprehensive programme of work which would have more fully realised the stated aim, most especially with regards to the freshwater peal mussel.

The evidence as presented in this evaluation would indicate that the NPWS, as the competent authority, was reluctant to engage on a partnership level in a similar manner to all other agencies and bodies, including Inland Fisheries Ireland and the EPA. It decided instead to take the regulatory route which resulted in very significant delays to the project in the granting of licensing for its freshwater peal mussel work and similar delays related appropriate assessment requirements.

3.4 Key Achievements

Four years after the launch of project, DuhallowLIFE+ has successfully delivered on the overwhelming majority of project actions. The delivery of these actions have promoted and enhanced practical community based conservation management in the catchment. In reviewing the actual implementation timeframe of DuhallowLIFE (June 2010 to June 2015) the following key project actions have been completed:

<u>Key Achievements:</u>
<ul style="list-style-type: none"> • Undertook extensive survey work on the distribution and density of Himalayan Balsam and other non-native invasive riparian plant species throughout the Allow catchment. • Treated over 36kms of river channel (riparian habitat) to control, physically remove and eradicate Himalayan Balsam as non-native invasive plant in the catchment and undertook extensive monitoring to assess regeneration of native riparian flora. • De-tunnelling work on over 3km of river and improved instream habitat. • Enhanced important selected sections of riparian habitat by planting over 5km of trees. • Undertook 500m of bank protection work and bank re-profiling work on the Dalua and Allow Rivers utilising local rock. • Installed 6 silt traps on important freshwater pearl mussel tributaries of the Allow River. • Installed 10 experimental artificial otter holts and undertook extensive otter monitoring work on the use of these sites. • Improved otter habitats through an extensive programme of tree planting, fencing and general riparian management including installing 28 brush bundles. • Installed 12 kingfisher boxes and 20 dipper boxes across the catchment and monitored the take-up and use of same.
<u>Key Achievements (Continued):</u>

- Worked directly with local farmers with extensive river frontage to find solutions to water quality concerns and problems of bank erosion slippage and reviewed alternative watering solutions and alternative river crossings.
- In working collaboratively with local farmers, fenced over 34km of river bank and installed 28 watering solutions away from rivers and agreed alternative more restrictive river crossing points which impacted less on target species.
- Established the Rural Social Scheme within the Allow Catchment with workers having a clear, well defined focus on practical, river based conservation activities, including the removal of Himalayan Balsam from throughout the Allow Catchment.
- Delivered 23 illustrated environmental talks by both the project team and by leading Irish and international experts in various focus areas of DuhallowLIFE+.
- Undertook 41 school visits (primary and second level) as part of a local environmental education initiative for schools in the Allow catchment. This included both classroom and river based field activities. This work expanded on the positive environmental message of the LIFE project and enhanced a sense of place and pride in the locality for local schoolchildren and their teachers.
- Developed a range of promotional and educational materials, including an illustrated project brochure, annual project calendars, regular newsletters, a range of environmental awareness brochures and a high quality DVD on the work of DuhallowLIFE+.
- Networked, liaised, visited, hosted and undertook collaborative research and other work with LIFE+ projects and other EU funded projects in Ireland (3), the UK (1), Sweden (1) and Slovenia (1) and also worked with a range of third level institutes in Ireland.
- Developed a series of advice leaflets and guides for the practical sustainable management of rivers in the Upper River Blackwater catchment together with a detailed Management Plan for the Allow Catchment.
- Hosted a major international end-of-project conference which disseminated the main project results and findings

3.5 Evaluation Conclusions

From the very outset, the project was extremely ambitious as it worked to bring about a sustained enhancement of the Upper Blackwater SAC. Projects of this nature are never easy to plan and successfully implement and the provision of significant funding from the EU through LIFE+ offered a great opportunity to see the objectives of the DuhallowLIFE+ project realised. This was especially relevant as the implementation phase of the LIFE+ project corresponded with a time of scarce resources for environment related works. It should be noted that the implementation phase took place during the most severe economic recession in the history of the Irish State.

This evaluation concludes that the DuhallowLIFE+ project has achieved its main project objective i.e. to improve the conservation status of its target species in the Upper Blackwater River SAC. The granting by the EC LIFE Unit of the project modification, which included a project extension to June 2015, greatly assisted the project to address various project setbacks, including licensing difficulties, and the disastrously wet summer of 2012. These, and other setbacks, had impacted negatively on project delivery and especially survey work. Exceptionally good weather conditions in 2013, 2014 and first half of 2015 ensured that the project had an excellent final two and half years. This resulted in an outstanding delivery on almost the full range of project actions. Despite setbacks, DuhallowLIFE+ delivered on all its main project actions, including additional actions added during the course of the project.

DuhallowLIFE+ is now complete and the success of the implementation phase has resulted in the following:

- Enhancement of habitat and range for freshwater pearl mussel, Atlantic salmon, European otter, dipper and kingfisher in the Allow Catchment.
- A greater awareness and understanding of issues affecting the Upper River Blackwater SAC and how to address these issues.
- The development of practical, user friendly and transferable management prescriptions for habitat enhancement work for freshwater pearl mussel, Atlantic salmon and European otter in other river catchments.
- A strong local 'environmental awareness' of the importance of the Allow catchment and the wider Blackwater River SAC.

Section 4: Evaluation Process and SWOT Analysis of Duhallow LIFE+ Project

4.1 Aims and Objectives of the Evaluation of the Duhallow LIFE+ Project

This ex-post evaluation has been commissioned by the coordinating beneficiary of IRD Duhallow LIFE+ to assess the achievements of the LIFE+ Project Number, LIFE09 / NAT /IE/000220 / Blackwater SAMOK. The project was undertaken under the LIFE+ Regulation which was introduced in 2007. The ex-post evaluation has examined delivery of project actions and their related relevance and effectiveness together with the efficiency and consistency of delivery. In a wider context the evaluation reviewed the impact of the LIFE+ Project on the local economy, its distributional effects and the local acceptability of the project. The evaluation was initially conceived at the project application stage as an annual external evaluation independent of the coordinating beneficiary. This was later changed to a single ex-post evaluation in the final months of the project and was designed to ensure that the full scope of the implementation phase could be included in the evaluation.

4.2 Brief Overview of the LIFE+ Regulation and Overview of Programme

The purpose of the LIFE+ programme is to contribute to the implementation, updating and development of EC environmental policy and legislation, including the integration of the environment into other policies, thereby contributing to sustainable development. Finalised in 2007, the LIFE+ programme in particular, was designed to support the implementation of the 6th Environment Action Plan (6EAP), including thematic strategies, finance measures and projects with European added value. The LIFE+ programme, under which DuhallowLIFE operated, frames three support interventions. Only the first of these below is relevant to this evaluation:

- The LIFE+ Programme - Action Grants, funding projects to support environment policy development and implementation.
- The NGO Programme – Operating Grants to fund NGOs in dialogue on environment policy.
- Public Procurement (excluding NGO Programme) – funding the purchase of services by DG Environment to support policy development and implementation.

The LIFE+ Regulation, under which Duhallow LIFE+ operated, was governed by Financial Regulation and Implementing Rules. The rules consolidated previous programmes and continued the Action Grant funding of the earlier LIFE Programmes (I, II, III). The key reference document was the Standard Administrative Provisions. This evaluation did not review financial aspects of the project other than within the context of the overall management of the project. A separate independent audit will perform an external independent audit when the project is finished.

4.3 The Socio-economic Context of the Project

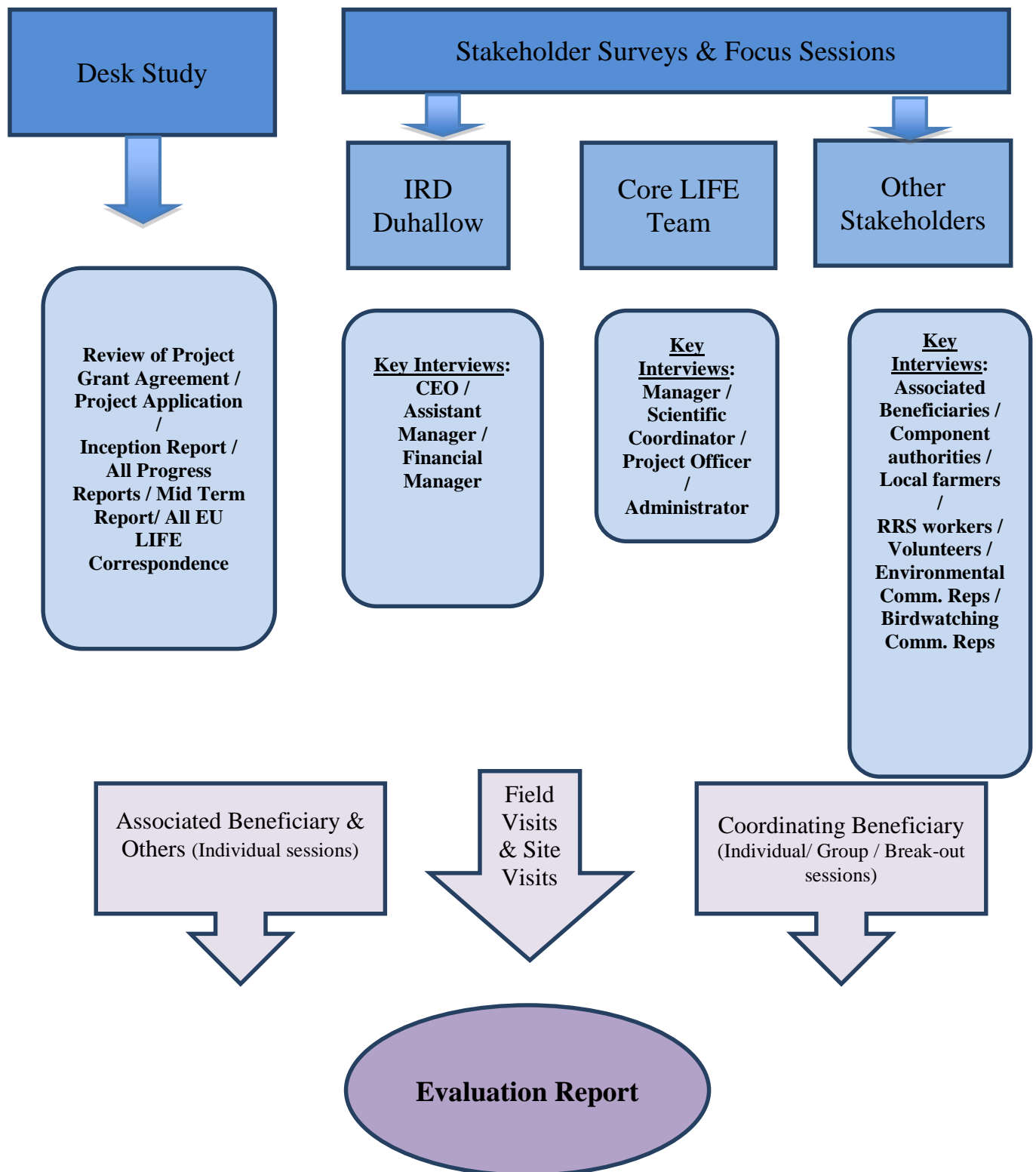
The approach of the DuhallowLIFE+ project, much akin to the coordinating beneficiary IRD Duhallow, was to work in partnership with all relevant actors. This included the two associated beneficiaries (IFI and Pobal / Rural Social Scheme), other key partners

and supporters, including the EPA, Coillte (Semi-state commercial forestry company), local farmers, anglers and community groups. The main objective of this partnership work was to develop and deliver a practical, targeted approach to habitat restoration and riparian management for the Allow catchment for the targeted species and their related habitats. Before the awarding of LIFE+ funding an existing environmental sub-committee was in place and worked effectively within the overall organisational structure. The newly established catchment management group worked to build a durable and lasting partnership between local government, state agencies and local communities. The parties, with the exception of the NPWS at a national level, worked extremely closely together. Through an active catchment management partnership structures have been set in place that will remain a lasting legacy in the AfterLIFE phase of project.

4.4 The Approach and Methodology Adopted for the Ex-Post Evaluation

In line with requirements outlined in the evaluation terms of reference for the DuhallowLIFE+ project, the general approach has been to collect and analyse empirical evidence and to cross-check and further develop these findings through participatory stakeholder surveys, focus sessions and analysis of available records on DuhallowLIFE+, including media, web and social media output. The process has been structured in line with the evaluation requirements to present an overview of the implementation of the DuhallowLIFE+ project. The evaluation took an empirical approach to collect, analyse and assess the information and judgements of the various stakeholders involved in the delivery of the DuhallowLIFE+ project. To begin, the evaluation team conducted a detailed review of relevant documents, especially project documentation and outputs, progress reports, assessment and feedback by the LIFE Unit. Stakeholder discussions were conducted through a combination of surveys, one-to-one interviews and group sessions depending on the issues and relationship of stakeholder representatives to the relevant issues. A SWOT analysis was also conducted and this provided a basis for comparison on a number of issues.

Figure 1: Overview of the evaluation methodology



5. Project Management and Administration

5.1 Project Management Structure

The project management structure, developed for the implementation of the DuhallowLIFE+ project was built on the existing successful organisational structures of IRD Duhallow, as in Figure No 2.

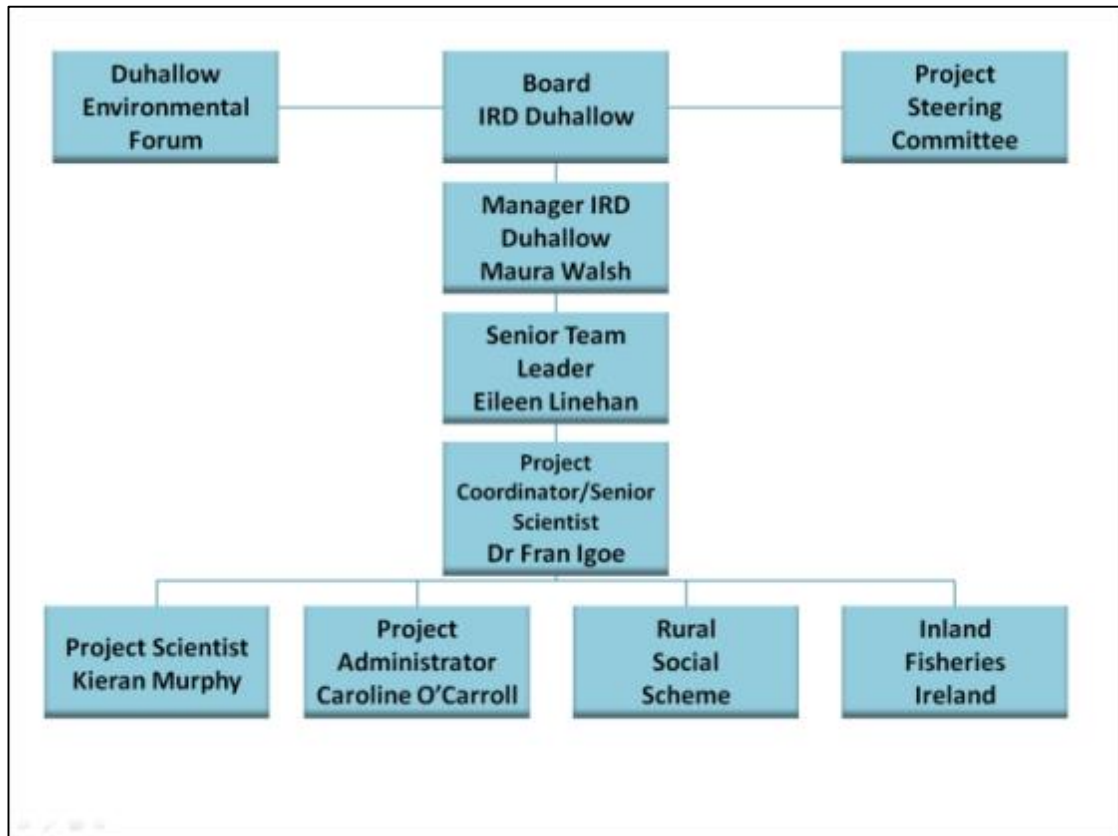


Figure No. 2 Management Structure of DuhallowLIFE+ & Project Team (June 2015)

5.2 The Project Management System

The project management system deployed by DuhallowLIFE+ was based on the successful implementation of other EU and national funded projects which IRD Duhallow had managed over the past 20 years. Day-to-day management was undertaken by Ms. Eileen Linehan and Dr Fran Igoe, in their roles as Team Leader and Project Coordinator respectively. Dr Igoe was assisted by a full-time Project Officer, namely Mr. Kieran Murphy. The project was also supported directly by other IRD Duhallow staff, based out of the James O' Keefe Institute. The staff members, which included the CEO and other administrative and support staff located within the James O' Keefe Institute in Newmarket, supported the implementation of project actions. These staff members provided support for financial administration and recording of all financial payments to ensure that the coordinating and associated beneficiaries adhered to the requirement of the LIFE+ regulations. The Team Leader dealt with all other finance and administrative issues and all invoices, tenders and financial reporting. This

work was carried out with the support of the Financial Administrative Officer assigned to DuhallowLIFE on a part-time basis.

The James O' Keeffe Institute acted as a visible and tangible hub for the LIFE project. It linked the project to the long history of community activism and rural development which IRD Duhallow, has played in the catchment. The importance of this hub to the local community and in the delivery of the LIFE project cannot be underestimated.



The James O' Keeffe Institute, acted as headquarters for the DuhallowLIFE+ project and IRD Duhallow (Image: IRD Duhallow)

5.3 Staffing and Changes

While the organisational structure of IRD Duhallow has remained constant since the commencement of the DuhallowLIFE+ project, various staffing changes occurred which have impacted on the Project Team during the implementation phase. The most notable amongst these was the departure of the first Project Coordinator, Mr. Pat Fitzgerald and his replacement by Dr Fran Igoe. This occurred shortly after the official launch of the project, when the project was in the initial roll-out phase. The impact was both symbolic and real. It impacted negatively on the project's presence on the ground and placed significant additional reporting functions on the shoulders of Dr Igoe which were in addition to field and survey work.

In addition, Ms. Teresa Collins was replaced by Ms. Caroline O'Carroll as Project Administrator in year two of the project. The former left to take up a position in a new post. Her departure also resulted in the loss of time and the experience and institutional memory which had been built up by the project's first administrator. Neither of these two developments were critical but rather set-backs in terms of building momentum for delivery of project activities. On the positive front, Ms. Eileen Linehan brought very considerable project management experience to her position as Team Leader and an excellent understanding of EU reporting requirements. CEO, Ms. Maura Walsh, brought a lifetime of rural development and community development experience and made such invaluable experience available to the DuhallowLIFE+ project. She ensured the buy in of various agencies including Pobal, for the Rural Social Scheme workers, which has proved invaluable in the project implementation phase. In addition, Mr. Kieran Murphy, having joined the project as a student placement was subsequently engaged as project officer / project scientist. His introduction was a major addition to the Project Team in this initial phase and assisted greatly in the delivery of field work,

survey work and monitoring actions. Another very significant development was the addition to the Project Team of Ms. Nuala O' Riordan who provided additional capacity in terms of the supervision of RSS workers and the delivery of project actions related to educational outreach and information dissemination activities. Ms. O' Riordan in particular would appear to have made a very significant impact in the project's community outreach work.

5.4 Reporting to the EC LIFE Unit

All European Commission reporting, which included all annual progress reports, mid-term report and all financial reports, plus all liaison work with the external monitor took place through the Project Coordinator via the CEO of IRD Duhallow. The evaluators have reviewed all communication with the LIFE Unit and the External Monitoring Team. The evaluation of this documentation coupled with key interviews, indicate that the reporting relationship was efficient and professional throughout the implementation phase. The reviewed documentation also indicates that a good relationship existed between the Project Team and the LIFE Communication Team in the LIFE Unit. Considerable liaison occurred between the various parties and DuhallowLIFE+ featured in a number of LIFE events in Brussels and the UK. Similarly, the DuhallowLIFE+ Project was well represented at other LIFE events including the 'LIFE @ 20' celebrations, the co-hosting with MulkearLIFE of the first ever LIFE Seminar in Ireland, participation in national LIFE Information events, and presentations at various events including MulkearLIFE's End of Project Conference.

5.5 IRD Environmental Forum

The Environmental Forum pre-existed the establishment of the LIFE project and consequently has had an important advisory input into the functioning of the project. The Environmental Forum consists of representatives from IRD Duhallow, Birdwatch Ireland, Coolwood Wildlife Park, NPWS, IFI, Upper Blackwater Anglers Federation, Agricultural Working Group (IRD Duhallow), Dept. of Zoology UCC and the Marine Institute. The Forum put actions in place within IRD to maintain and further develop a sustainable environment for Duhallow. The Environmental Forum has identified objectives which will further enshrine the commitment of IRD to promote sustainable initiatives throughout the organisation including environmental awareness campaigns, sustainable land use, protection of habitats and ecosystems, promotion of ecotourism, protection of endangered species and conservation of hedgerows.

In terms of the reporting relationship, the LIFE Team provided regular project updates to the membership of the Duhallow Environmental Forum, who gave valuable feedback and advice, technical assistance where possible, and made various recommendations on a range of project actions. Much of the advice related to the particular areas of interest of the membership of the Environmental Forum which was to some extent a weakness. However, extremely valuable input and advice was given on approaches to community outreach and farmers' liaison, project information contained on site signage, water quality concerns and pollution incidents.

Section 6: Evaluation of Project Activities

6.1 Evaluation of Project Actions - focus on Conservation and Dissemination Actions

ACTON C.1: Reduction of bank erosion

The LIFE project worked to stabilise excessively eroded, and continually eroding, river banks. It was intended that this would be done through river restoration bioengineering techniques on areas where river bank erosion had been identified as a source of excessive siltation. The techniques were designed to reduce the erosive power on the inside bank by introducing buffers to reduce the shear stress of the flood water current. The evaluation reviewed clear evidence of this work at several locations in the field and how the techniques deployed served to reduce the amount of silt in the Allow River. In addition, clear evidence of work of enhancing the riparian zone was noted. The willow spilling, or willow wattling work, was completed on approximately 330m of the Allow River. It was an innovative, low cost, bioengineering solution to address bank erosion and siltation.



Willow wattling work on the Allow River (Image: Ruairí Ó Conchúir)



Work to stabilise bank erosion, Allow River (Image: Ruairí Ó Conchúir)



Willow wattling work on the Allow River (Image: Ruairí Ó Conchúir)



Work to stabilise bank erosion and enhance the riparian zone (Image: RÓC)

Monitoring of the work highlighted that larger willow stakes provide more shoots and therefore offered a better and more reliable rooting system than smaller slips. This was also an important project innovation and was one of several innovative and practical solutions which were developed by DuhallowLIFE to address problems faced in the field. They were reviewed in situ during this evaluation. While outside the scope and timeframe of this evaluation, it is clear that the work has the potential to provide significant benefit for salmonids and other juvenile fish species. The reduction of silt in the river system is especially benefiting to Freshwater Pearl Mussel and Atlantic salmon.

ACTION C.2: Reduction and elimination of tramping and soiling of river by cattle by fencing vulnerable river bank sections.

The focus of DuhallowLIFE's work was to reduce river bank disturbance by cattle in order to reduce excessive siltation in the Allow catchment. The project worked in close co-operation with local farmers to fence river banks in areas identified in previous survey work where cattle access was destabilising the banks. The work was intended to reduce secondary sources of siltation. By stabilising the river channel, the work was designed to improve cover for juvenile Atlantic Salmon and other fish species and facilitate the recolonisation of the riparian zone with suitable vegetation. The mid-term report noted that a re-evaluation of the fencing requirements had taken place and that some landowners had moved over to the production of silage. Livestock access was not as critical and as immediate an issue as before. The EC response was that fencing vulnerable areas of the river should continue to be seen as a key priority even if, in the short term, cattle may not be present for certain years. The project should target all land use types where river banks are vulnerable to erosion.



Fencing indicating rich riparian biodiversity inside fence (Image: ROC)



Rich riparian biodiversity on the Allow River (Image: Ruairí Ó Conchúir)



Electric fencing on the Allow River (Image: Ruairí Ó Conchúir)



Electric fencing on the Allow River (Image: Ruairí Ó Conchúir)

The evaluation reviewed clear evidence of this work at several locations in the field, met with farmers and discussed the merits of the work undertaken. Most landowners had been requested to agree to a fence line further out than that placed by some landowners under a previous Agricultural Environment Scheme. A total of 34.03km of fencing has been completed, or 90% of the planned length. It is testament to the nature of the partnership and the good working relationship between the Project Team and local landowners that the LIFE Project, generally, was in a position to secure the fence line at a greater distance away from the river. It was generally 2 meters or more back from the river. The LIFE Project also developed flood friendly fencing which was an important project innovation.

***ACTION C3:** Removal of cattle drinks and crossing points causing siltation and organic pollution by provision of alternative drinking strategies including novel pumping systems (e.g. solar panel powered pumps for drinking troughs).*

The LIFE project worked to address disturbance by cattle at crossing points and cattle having direct access to rivers for water. Such drinking sites are a principal cause of excessive siltation in the Allow catchment. Initially, it was intended that three crossing points would be replaced by more permanent crossing structures (bridges). This did not emerge for various reasons and catered for in the project modifications request. Significant success was achieved with the installation of pasture pumps and water troughs. Cattle drinks, which cause siltation through trampling and organic pollution were replaced by more environmentally acceptable watering devices. The reduction of silt will benefit Pearl Mussel and Atlantic Salmon. Provision of alternative drinking sources included both conventional cattle drinking troughs, gravity feed and nose operated pasture pumps, and more novel pumping systems, solar panel powered pumps for drinking troughs, where site elevation was an issue relative to river water level. Such a site was visited as part of this evaluation, where a solar powered system and 7 troughs had been successfully installed. The system was operational without problem in a sustainable manner for a number of years.



Water trough, fencing and solar pump (Image: Ruairí Ó Conchúir)



Woodlot next to Dallow River (Image: Ruairí Ó Conchúir)



Pasture / nose pumps below Freemount Br. (Image: Ruairí Ó Conchúir)



Pasture pumps above Johns Bridge, Allow River. (Image: Ruairí Ó Conchúir)

ACTION C.4: Replacement and upgrading of existing silt traps and provision of new silt traps and constructed wetlands to remove silt emanating from afforested upland sections. Trails of purposely designed wetlands will be carried out to determine their effectiveness in treating silt derived from commercial forestry in upland areas.

No constructed wetlands have been installed. Six silt traps have been constructed and made operational, exceeding by one the planned amount. While the evaluation included field visits to various sites in which silt traps were installed the benefits of such installation is outside the scope of this evaluation. As a project innovation, any measure that leads to a reduction in the discharge of silt is to be welcomed. The scientific benefits to Freshwater Pearl Mussel and Atlantic salmon from the reduction of silt are only realisable within a more comprehensive catchment management programme.

ACTION C.5: Rebalancing of riparian vegetation to address areas affected by excessive shading.

The LIFE project worked to address the impact of tunnelling, or the effect of too dense vegetation, adversely impacting on the production of essential aquatic macro-invertebrates important in the diet of juvenile Atlantic Salmon. To address a total of 3.11 km has been coppiced/pruned in the target river bank – slightly under half (48%) of the planned length to be treated.

ACTION C.6: Rebalancing of riparian vegetation to address areas where riparian cover is inadequate.

The LIFE project also worked to address riparian zones which had been degraded due to excessive grazing and trampling by cattle. This facilitated the re-emergence of native riparian flora and enhanced biodiversity along the riparian corridor, providing shelter to the range of aquatic organisms which utilise the river. It also contributed, over the duration of the LIFE project, to stabilisation of the river bank, providing buffering against possible overland organic pollutants. A total of 5.2 km, or 76% of planned, has been planted to provide the dappled shade. This is a very significant project achievement.

ACTION C.7: Action for otters – Provision of habitat and resting areas for otter through introduction of brush bundles and otter holts.

The geographical focus of the project area is an important catchment for otters. However, it was noted in the project application that significant sections of the Blackwater River catchment are devoid of holts and similar resting areas possibly due to historical drainage programmes and current drainage management practices. The work was focused on the construction and installation of 10 artificial otter holts in the main Allow Channel from Freemount to the confluence of the Blackwater River main channel. Other sections of river were also investigated to ascertain if it is likely that otter would benefit from the construction of holts. Other work to benefit otter was focused on the revegetation of riparian zones. The work was intended to cover 27 km of river, and involve the constructing 10 otter holts and 28 brush bundles.

The work commenced with a survey of otter usage of the proposed sites before the habitat improvement works were carried out. This was intended to include survey work on population density and distribution and include field monitoring of dens, tracks and spraints. This type of survey work would provide an indication of increased otter usage post works.



Spraints - key evidence in otter survey work (Image: RÓC)



Otters are very difficult to find in the wild (Image: John Murphy)



Otter prints - key evidence in otter survey work (Image: RÓC)

What has been indicated in project monitoring reports is that nine out of the ten artificial otter holts were monitored. One site could not be monitored as it could not be found six months after installation. In 2012, six artificial holts, out of the nine located, were positive for otter activity. The positive evidence included otter spraints and trails or runs leading to or from the entrances of the holt. Regrettably, confirmed usage of artificial holts fell in subsequent years. This may be due to the vegetation at sites becoming overgrown and less accessible. But in reality this should have been the exact habitat which the project was attempting to create. Such sites should perhaps have been recorded on a GIS map with specific GPS marking or other marking. In Ireland, otters have large territories with females inhabiting a territory of up to 7.5km with on average up to 13.2km. This large territory may also explain the change in recorded activities.

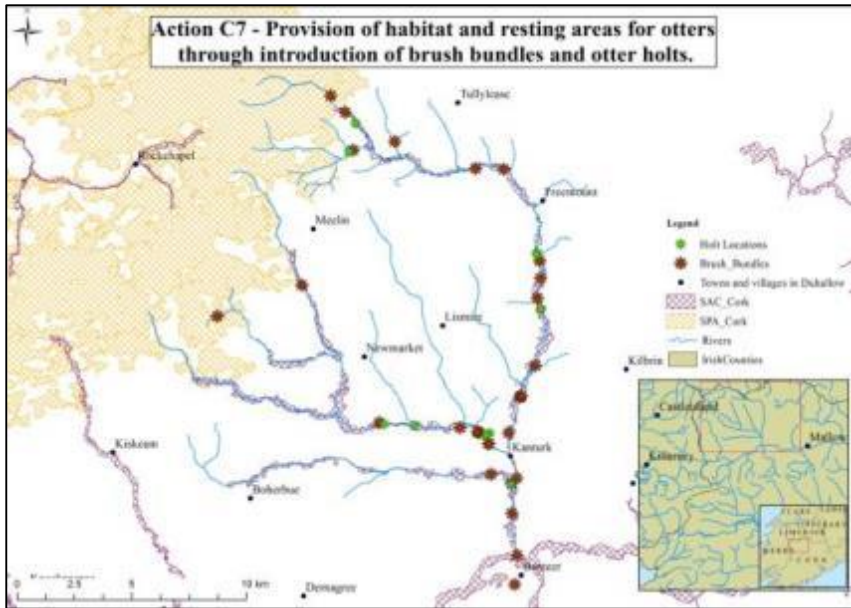


Figure 3: Locations where artificial otter holts & brush bundles were installed in the Allow River catchment area

It was unclear in the evaluation on what basis the locations of the brush piles were decided upon of which 28 were installed. No activity was recorded at any of the locations. It would appear that the vast majority of these piles were installed in 2015 with only a limited time between installation and inspection. In a similar way to other projects, it is clear that the installation of artificial holts and brush piles play a bigger part in raising awareness among landowners than in providing additional sites for otter. This was evident to the evaluators in the case of DuhallowLIFE+.



Artificial Otter Holt, Allow River (Image: Ruairí Ó Conchúir)



Log pile / brush pile next to Dalua River (Image: Ruairí Ó Conchúir)



Woodlot next to Dalua River for log pile (Image: Ruairí Ó Conchúir)



Log pile / brush pile next to Dalua River (Image: Ruairí Ó Conchúir)

ACTION C.8: Action for Kingfisher – Provision of nesting boxes for Kingfisher.

The kingfisher is an iconic bird with a long association with Irish rivers. Survey work in the DuhallowLIFE operational area has failed to record any Kingfisher sites along the Allow River. It is likely that past erosion and ongoing instability of banks may have precluded the nesting of Kingfisher in the Allow River. They were known to occur in the main Blackwater River. While many of the project actions would directly or indirectly benefit Kingfisher (Actions C1 to C6 should benefit by improving stability of the river banks and enhanced biodiversity (food) in the area). The LIFE Project also set about to directly improve nesting options for Kingfisher through the strategic placement of nest boxes to assist in the recolonisation of the species. Twelve nest boxes were installed in selected sites. While all of the 12 nest boxes have been placed in the selected areas it was unclear during the evaluation how successful the uptake of the nest boxes was. It is also unclear what level of monitoring was put in place.



The kingfisher - an iconic river bird (Image Paddy Halpin)

ACTION C.9: Action for Dipper – Provision of nesting boxes for Dipper.

The LIFE Project set about to address the fact that dipper nesting sites in the catchment had become increasingly limited due to the loss of habitat under bridges as a consequence of pointing. While various project actions (Actions C1 to C6) were of direct and indirect benefit to dippers, stabilising river banks and enhancing aquatic biodiversity (the food source for dipper who feed primarily on macroinvertebrates - Mayflies and Stoneflies), this specific action focused on the installation of Dipper boxes. The project set about to install 10 nest boxes at strategical locations on the underside of bridges to increase the range of the species.



Dipper boxes, Mallow Road Bridge, Kantuck Town (Image: RÓC)



Two dipper box designs, Freemount Br., Allow River (Image: RÓC)



Dipper box (unused), Allow River, Kantuck Town (Image: RÓC)

While some sites visited as part of the evaluation were unused as nesting sites by dipper, the LIFE project installed twenty dipper boxes in total. These included several sites where various different design options were fitted and strategically placed on the underside of bridges. This was a very considerable project achievement, with double the target number of boxes installed. An even more important outcome was the awareness raising which resulted from this work of this little know but exceptional river based bird species.

ACTION C.10: Removal and monitoring of Himalayan Balsam.

The success of DuhallowLIFE's work to control Himalayan balsam was one of the key achievements of the LIFE project. Himalayan balsam is a rapidly spreading non-native invasive plant that can take over large areas of a riparian zone in a very short period of

time. It increases the risk of riverbanks washing away due to the fact that it prevents the growth of native riparian flora and more long-lived plants and grasses which bind the soil with their roots. If left uncontrolled, it dominates riparian vegetation at the expense of native flora and riparian species. The project had initially planned to complete the removal of the species from the Allow River along an area of 4.56 km and to continue to monitor species to avoid its re-emergence. What was achieved was the treatment of over 36kms of river channel (riparian habitat) to control, physically remove and eradicate Himalayan Balsam as non-native invasive plant in the catchment. This was supported by an extensive monitoring to assess regeneration of native riparian flora.



Himalayan Balsam, a major threat to riparian biodiversity (Image: R. Ó Conchúir)



Seedhead of the Himalayan Balsam plant (Image: Ruairí Ó Conchúir)



Himalayan Balsam site, below Kanturk Town (Image: Ruairí Ó Conchúir)



Himalayan Balsam site, above Kanturk Town (Image: Ruairí Ó Conchúir)

The work, and more importantly the approach, to control the species has important implications for other rivers and catchments across Britain and Ireland. The success of the work to control Himalayan balsam and effectively remove it from a catchment has important implications for local authorities, land owners and community groups and individuals. It highlights the value of early intervention and a coordinated approach to deal with Himalayan balsam in their area. The lessons learnt by the DuhallowLIFE+ should be incorporated into training programmes, management planning and control/treatment guidance to all relevant bodies, groups and individuals.

6.2 Evaluation of D Actions

ACTION D.1: Create Community Awareness: Public Awareness and Participation Workshops.

Promotion of the project and the importance of the site for the target species and as an SAC is important for the long term viability of the SAC. There is a need for greater public awareness and a sense of environmental stewardship towards the target species and their habitats. Education activities were provided to a range of target groups (including community groups and general public) together with training in aquatic and riparian environmental monitoring and species recording. Workshops were held in Newmarket, Kanturk and Freemount. While at the project application stage it was envisaged that ten workshops would take place thirty workshops were delivered, three times the planned number in the grant agreement.

ACTION D.2: Creating awareness amongst school children.

Young people are the future decision makers and guardians of the environment. A total of 36 primary schools were visited during the project life, slightly less than the target of 40, as four of the smaller schools closed down. Five post primary/secondary schools were visited, the same as the target.

ACTION D.3: Educational lectures.

Public lectures are an important source of information for local communities. They offer a point of contact between the local community and experts in the field of environmental education and conservation and often stimulate positive debate. The work of the project was focused on the delivery of free public lectures focused on the target species or related environmental issues relevant to the SAC. The LIFE project attracted many leading speakers to give illustrated talks on issues relevant to Duhallow and of general public interest. Twenty-three lectures were delivered, just over 70% of the planned number, on a wide range of subject areas including the lifecycle and management of Freshwater Pearl Mussels, otters, non-native invasive species and their impact on the environment, water management, farming for conservation, biodiversity, integrated catchment management, stakeholder partnerships in the management of SACs, commercial forestry and Hen Harriers, etc.

ACTION D.4: Development and management of website, with an educational dimension including volunteer census activity.

A well designed multi-functional project website was established at the start of the project. It was regularly updated throughout the duration of the project. This evaluation noted new articles and news items being regularly uploaded. It is clear that it was used extensively in local schools by teachers and students alike and formed an important element in community outreach and information dissemination. It is unclear however how successful the website was with respect to its use for the monitoring data on species uploaded in real time. It is also unclear how the website linked with other actions (Actions D1, D2, D3 and D5) as was initially envisaged in terms of public data collection.

The evaluation noted that the project website and related Facebook was of a good quality, was regularly updated and was used to maximise education and community involvement with the LIFE Project. It was also clear at the time of the evaluation that the total number of articles uploaded was considerable, as eighty-four articles were uploaded to the website, three and a half times more than the target.

ACTION D.5: Schools Species Recording Project

Sixth class students from primary schools enjoy a multi-media approach to learning. A practical mapping project was developed involving students marking the location of key species of flora and fauna on individual maps. This work was designed to promote “learning through discovery” with a focus on local biodiversity in their local environment. The first phase involved primary school children identifying and recording the location of key species. The second phase involved students from secondary schools being educated on freshwater habitats and associated species through practical work such as digitising the data collected and generating maps of species distribution using GIS.

A total of 36 schools have been involved in software applications related to this work.

ACTION D.6: Media activity relating to education and community monitoring actions.

This action was designed to improve public awareness and attract people to take an active part in the conservation of the target species and their habitats. It consisted of a media campaign through local and national media and was enhanced by training and monitoring activity of Action E4 and web presence of Action D4. Activities included issuing press release, press conferences and radio and newspaper interviews, and national television coverage.

Achievement: At the time of evaluation 31 of the target 34 press releases have been achieved. Publications in magazines totalled nine, easily exceeding the planned four. Three national radio interviews have taken place, one less than planned, while the six local radio interviews were two short of the target eight. One TV programme was achieved, one short of the planned two. Two of the four planned articles have been prepared for e-magazines.

ACTION D.7: Development of information brochures/newsletter and signage about the project.

The DuhallowLIFE project designed and developed well received brochures and newsletter. They were produced in appropriate language for the local community and were published to illustrate the objectives of the project, with information on habitats and species and how people can engage with the LIFE project in real and practical ways. Signage at various sites was reviewed as part of this evaluation. The LIFE Project signage was placed at five key locations along river sites within the catchment to point out the delivery of key actions specific to the area in question together with information

about the species involved in the LIFE project. The signage was deemed to be of good quality, informative and easily accessible and was erected as planned at the five key locations, this included signage at Freemount Bridge and John's Bridge on the Allow River. Also as planned, 16 e-newsletters and four brochures were published.



Signage John's Bridge, Allow River (image: RÓC)

ACTION D.8: End of project conference.

In the project application, the end of project conference was intended to be used as a medium to disseminate the project results, and to give closure to the project. The end of Project Conference took place on the 21st and 22nd May 2015 as part of a major two-day event at which the Raptor LIFE project was also launched. The theme of the conference was 'Celebrating Hands On Community Participation In Nature Conservation'. The event was an overwhelming success and marked the end of the four and half year LIFE project. The conference also included presentations by various members of the project team and other IRD Duhallow staff on the achievements of the project and an overview of the AfterLIFE management planning. Dr Fran Igoe, Project co-ordinator, outlined the background to the project and gave examples of innovative

measures developed by the project to assist farmers and conservationists to help address problems regarding livestock management near watercourses, water access, land erosion, drainage and excessive shading. Kieran Murphy, Project scientist outlined the conservation actions to assist otter, kingfisher and dippers and gave a comprehensive overview of the invasive plant species removal work. Nuala Riordan, Project officer with IRD Duhallow, presented on the community outreach work, public engagement and education elements of the project.

The keynote speaker was given by author, historian and leading Freshwater Pearl Mussel (FPM) expert John Lucey. The extremely interesting presentation covered the ecology of FPM, current and historical impacts, and gave a history on their use in the jewellery industry in Ireland. The event also included a series of excellent EU LIFE project presentations from around Europe. Marjana Hönigsfeld, Institute for Conservation of Natural Heritage, Slovenia who spoke on otter conservation in Slovenia, Diane O’Leary, West Cumbria Rivers Trust, Pearls in Peril LIFE+UK, presented on Freshwater Pearl Mussel conservation in the UK, Ruairí Ó Conchúir gave a presentation on the work carried out for the MulkearLIFE project and demonstrated how successful conservation work was carried out to improve lamprey fish passage and also the work carried out with farmers and on invasive plant species.

The end project conference was an overwhelming success and similar to the Project’s other communications actions, was generally very well delivered. The Project achieved, or exceeded all its main targets for these actions. The End of Project Conference was perhaps the most important information dissemination event. The Project Team, and the wider IRD Duhallow team, did not disappoint in giving extremely positive and uplifting presentations on the key outputs of the project, most notably the Management Plan and outlining the AfterLIFE Plan.

Section 7 Evaluation, Conclusions and Recommendations

7.1 Effectiveness and Efficiency of Overall Project Management and Administration

While the overall management structure of IRD Duhallow has been extremely successful in terms of implementing a range of EU and national funded programmes over many years, the sheer size of the work programme of the DuhallowLIFE+ project would appear initially to have been a major challenge to IRD Duhallow. The structure has been successful in delivering on the project's objectives and in creating a clear path for the AfterLIFE plan. The human resourcing of the project was however not without challenges. The first significant challenge arose with the resignation of the first project coordinator and the time it took to put in place support structures to deal with the work load generated by this change in personnel. The evaluators also got a sense that it was unclear as to who was actually managing the DuhallowLIFE+ project on a day-to-day basis and hence who was ultimately responsible for liaison with the key role players involved including the NPWS. Given that this was such a critical relationship, when a major issue arose it was unclear as to who in the DuhallowLIFE+ project dealt with the senior officials in the NPWS. Consistency of contact and the consistency needed to build meaningful relationships with key project partners required the full-time attention of a senior project manager with the skills and background to take the process forward. Ultimately much of the project management fell to Dr Fran Igoe and his work was supported from an administrative perspective by various experienced staff members within IRD Duhallow.

In a general sense, the evaluators deemed that the overall project management and administration was effective and efficient and consequently the implement the project was deemed a success. Various indicators would support this conclusion including the submission of required reports within reporting deadlines, the roll-out of project activities in a timely manner, effective and imaginative resource utilisation and planning, amongst other factors. What parts of the PM were particularly strong, and what parts were less strong/more challenging (you could provide examples of both)? The conclusions should be based on verified evidence of activity planning and implementation, resources management (HR, financial and physical), monitoring and reporting, communications and dissemination.

7.2 SWOT Analysis of the IRD Duhallow LIFE+ Project

Projects within the LIFE+ programme aim to introduce desirable environmental change and also improvement in the knowledge and capacity for engagement of local actors in future environmental actions. This evaluation is deemed critical for IRD Duhallow LIFE+ to take stock not only of the extent of the change in relation to the objectives, but also to assess the strengths, weaknesses, opportunities, and threats that have marked the five-year implementation phase. This was seen a key tool to plan and act effectively in the implementation of other work, including a second EU funded LIFE project. In the case of this evaluation, the SWOT analysis essentially provided a practical tool to

explore both internal and external factors that have influences the implementation of the Duhallow LIFE+ project.

The SWOT analysis was used to guide the lead evaluator to identify with the key participants, namely key senior staff members of IRD Duhallow and separately the LIFE Project Team, the organisation's strengths and weaknesses, as well as broader opportunities and threats. This was done from an internal and external perspective. It has assisted in developing a fuller awareness of the situation context in which the Duhallow LIFE+ project was implemented. It has also greatly assisted in understanding the strategic planning and decision-making process regarding various elements around the implementation / non-implementation of aspects of the LIFE+ project.

The SWOT analysis was used as a tool in the evaluation due to its simplicity and application to LIFE+ projects and especially one involving a wide variety of role-players who were engaged at various levels of operation. It was clear from the SWOT analysis that a very significant range of positive forces have merged and worked together to greatly enhance the rate and level of delivery of the LIFE project. Equally it is clear that problems which emerged at the outset of the project should have been recognised sooner and addressed in a more comprehensive manner rather than allowing them to become a real threat to key aspects of the project.

I.R.D. Duhallow LIFE - SWOT Analysis 2011 to 2015 – Internal to I.R.D. Duhallow

<p><u>Strengths:</u> What did IRD Duhallow LIFE do well? What did you see as your internal strengths? What resources did IRD Duhallow LIFE draw on?</p> <ol style="list-style-type: none"> 1. Years of experience in the region and a real active partnership on the ground 2. Having the RSS/Tús programmes 3. In-house expertise – scientific, project management, environmental 4. Clear support of the bottom up approach of Leader 5. Contacts / Knowledge of structures & of government 6. IRD Duhallow well respected at local / national / EC level 7. High media / political profile & networking ability 8. Existing resources and Committed Project Team / Experience 9. Experience of running European and international projects 10. Political awareness and savviness of dealing with key role players 11. Structure of IRD Duhallow built around the community 12. Experience of volunteers and volunteerism 13. Environment as a key pillar of IRD yet addressing a cross sections of issues – environment / agriculture / rural tourism / education. 14. Support of farming community / support of local community 	<p><u>Weaknesses:</u> What could we do to improve the implementation of LIFE What are the key gaps that the LIFE project need to filled?</p> <ol style="list-style-type: none"> 1. Not having enough time / start time 2. Structure of IRD Duhallow 3. LIFE team perceived as weakness 4. LIFE seen as separate to IRD Duhallow 5. Lack of support from relevant state agencies 6. The unknown – the LIFE programme 7. Non-contiguous boundaries – Co Cork and Co Kerry 8. Do we represent partners from various locally based socio-economic sectors in the territory? 9. Retaining and up-skilling new RSS workers 10. Variable levels of quality and interest of staff members 11. Capacity to deal with increased bureaucratic workload
<p><u>Opportunities:</u> What opportunities are open to IRD / IRD Duhallow LIFE? What opportunities could we take advantage of? How can you turn our strengths into opportunities?</p> <ol style="list-style-type: none"> 1. Engagement of Water Framework Directive / importance of water quality 2. Catchment management as a science and link with EPA 3. New strategic development plan of IRD Duhallow with a strong environmental element 4. Enhanced integration of LIFE into IRD Duhallow 5. Willing workforce/teams within IRD Duhallow 6. Nature element of LIFE project helping to sell the programme 7. Expertise in species, birds, farming, agri-environment 8. Government legal obligations (priority habitats) 9. Local Support (public / political) 10. Link of RRS work programs back into the local economy - farmers supporting conservation measures in the own area & link back into the local area 11. Fully utilise the Duhallow name –quality food, eco-tourism, walking, etc. 12. Contacts in the government / EC 	<p><u>Threats:</u> What threats could impact on the IRD / IRD Duhallow LIFE? What other external factors could impact? What threats do our weaknesses expose us to?</p> <ol style="list-style-type: none"> 1. Loss or removal of RSS 2. Loss of scientific expertise 3. Sharing of scientific expertise with others 4. Other work competing for resources 5. Excessive workload 6. Prioritisation of project work over LIFE programme 7. LIFE not central to IRD Duhallow main programme areas 8. Down turn in the economy

I.R.D. Duhallow LIFE SWOT Analysis 2011 to 2015 – External to I.R.D. Duhallow

<p><u>Strengths:</u></p> <ol style="list-style-type: none"> 1. Raptor LIFE built on Duhallow LIFE 2. Positive public perception on the ground of IRD Duhallow 3. Positive public perception of the work of the LIFE programme 4. Unrestricted access to farms and rivers due to landowner goodwill 5. Support of landowners 6. Support of local schools 7. Rate of deliver/actual deliver of the LIFE programme 8. Quality demonstration sites 	<p><u>Weaknesses:</u></p> <ol style="list-style-type: none"> 1. IRD Duhallow not having RSS 2. Lack of clarity from regulatory bodies 3. Joined-up thinking absent in terms of the greening of CAP 4. Environmental issues need to be placed back on national agenda
<p><u>Opportunities:</u></p> <ol style="list-style-type: none"> 1. Engagement with other LIFE projects/networking 2. External monitoring support 3. Link to other societal benefits 4. Development of template for management of water courses within SACs and catchment management across SACs 5. LIFE funding/access to future LIFE funding 6. Raptor LIFE 7. Positive mental health link to RSS and outdoor engagement in practical conservation work 8. Developing local catchment management groups 	<p><u>Threats:</u></p> <ol style="list-style-type: none"> 1. Stakeholder disagreement on designations/planning 2. Lack of joined-up thinking and lack of integrated support 3. Red-tape and bureaucracy 4. No national conservation plan for freshwater pearl mussel 5. No integrated approach to freshwater pearl mussel 6. Irish system of planning and nature conservation 7. Lack of landscape management and landscape policy 8. Local development company and local authority alignment process 9. Upland developments, windfarms/forestry and intensification of farming 10. Lack of development of conservation management plan for the SAC

7.2 Project Reporting

From the review of documentation provided as part of this evaluation, it is clear that all European Commission reporting and liaison work with the external monitor took place through the Project Coordinator via the CEO of IRD Duhallow. The evaluators reviewed all communication with the LIFE Unit and Mr. Neil Wilkie of the External Monitoring Team. This review, coupled with key interviews, would suggest that the reporting relationship was efficient and professional throughout the operational phase of the project. It also indicates there was a good relationship between DuhallowLIFE+ Project Management and the LIFE Communication Team in the LIFE Unit and that considerable liaison occurred between the parties. DuhallowLIFE+ featured in a number of LIFE events in Brussels and the UK. Similarly, DuhallowLIFE+ were well represented at other LIFE events including the 'LIFE @ 20' celebrations, co-hosted the first ever LIFE Seminar in Ireland, participated in national LIFE Information events and presented at MulkearLIFE's End of Project Conference.

7.3 Project Approach and Methodology Deployed by DuhallowLIFE+

The overall project approach applied by DuhallowLIFE+ was that of bottom-up integrated rural development linked to the principles of integrated catchment management. This involved a multi-stakeholder approach to enhancing the conservation value of the Upper River Blackwater catchment. The methodology applied was more holistic, both in terms of representation and themes covered, than simply a fishery based catchment management process. The background, experience and reputation of IRD Duhallow in the area greatly assisted in this regard and without doubt helped in opening doors for the LIFE Project Team to statutory bodies which may well otherwise have been closed. The project objectives of DuhallowLIFE+ emphasised co-ordinated management approaches in the areas of water quality, habitat protection and development, riparian protection and education and awareness initiatives. The pre-existing Environmental Forum and DuhallowLIFE's Project Steering Committee comprised of representatives from the relevant statutory authorities within Counties Cork and Kerry, together with representatives from angling clubs, farming groups and from other relevant voluntary organisations, including BirdWatch Ireland and Irish Wildlife Trust.

7.4 Project Amendments and the Granting of DuhallowLIFE+'s Modification Request

DuhallowLIFE+ was implemented in accordance with the original approved project application. With LIFE funding in place, DuhallowLIFE+ provided dedicated staff which drove the enhancement work on the ground together with comprehensive educational and monitoring programmes for the Duhallow Catchment. Several minor technical and financial adjustments were made following approval which included several modifications towards the end of the project to add a new associated beneficiary (Pobal) to include the Rural Social Scheme workers. This required a modification to the grant agreement as did a subsequent review of project activities which led to a modification request for a project prolongation to 23rd June 2015.

The main project modification request was designed to seek an extension of the project until the 23rd June 2015. The granting of the project prolongation, with no budgetary implications, provided the opportunity for the full implementation of the agreed set of project actions and this enabled DuhallowLIFE+ to serve as an example for the development of a locally targeted and tailored catchment management project. The extension helped to ensure the installation of key conservation measures and allowed for a full programme of monitoring in 2014 and 2015. It enabled full analysis and interpretation of DuhallowLIFE+ data and facilitated the development of management planning for the SAC and an After-LIFE Conservation Plan.

7.5 Immediate and Longer Term Visibility of the Project

Many of the project actions implemented have produced immediate and visible results. The installation of artificial otter holts, dipper boxes, and extensive river fencing and the transformation of riparian zones fall into this category. The full benefit and impact of these actions will continue and in all likelihood will only be fully realised over the next 5 to 10 years.

7.6 Effectiveness of the dissemination activities

From the outset of the project in 2010, DuhallowLIFE+ developed a clear project identity and visible presence on the ground. Awareness of the work of the project was enhanced significantly due to the history of involvement of IRD Duhallow and sustained outreach work in the community over the previous 20 years. Consequently, DuhallowLIFE+ gained good traction in local schools, through the RSS workers and through the support and goodwill of local landowners and the local media. The one drawback of the strong association with IRD Duhallow was the fact the LIFE project did not create an identity and brand image for DuhallowLIFE+ in its own respect to the same extent as other Irish LIFE projects, e.g. BurrenLIFE and MulkearLIFE+. However, DuhallowLIFE+ did have real visibility which was primarily achieved through the project website (www.DuhallowLIFE.com) and related social media sites (Facebook). It was also achieved through a sustained outreach programme in the wider community, with workshops, illustrated talks and training seminars. The DuhallowLIFE+ project also delivered a highly successful series of visits to local schools. This work had immediate and positive impacts from school children and their teachers and indeed from the parents of school children.

DuhallowLIFE+ was also extremely active in terms of public awareness and the dissemination of results through the local and national media. In reviewing project documentation for this evaluation it is clear that excellent relations existed with a number of national and local newspapers and radio programmes, this included the Irish Examiner and RTE Radio 1. While difficult to evaluate, it is clear that the history of IRD Duhallow working in the area opened many doors, plus many farmer's gates which might otherwise be shut, for the Project Team. This was invaluable in the support and

goodwill shown towards the project and its dissemination activities. The decision to link Project Newsletters to the existing mailing list of IRD Duhallow was also extremely important.

7.7 Direct environmental benefits

DuhallowLIFE+ was designed to deliver direct (and immediate) quantifiable environmental benefits, not only for the targeted species of conservation importance but, for the biodiversity of the entire Upper Blackwater River catchment. Based on the findings of this evaluation, to a large extent this has been achieved. The measures carried out have resulted in increased local environmental awareness and a sense of ownership has been instilled in stakeholders and local schoolchildren.

7.8 Impact on Atlantic salmon & Freshwater Pearl Mussel

All of work carried out by the DuhallowLIFE+ project was undertaken as part of a holistic conservation plan, to improve habitats and enhance habitat for Atlantic salmon, freshwater pearl mussel and other species. Much of the planned work under the LIFE project for freshwater pearl mussel did not take place for various reasons including the provision of licensing. However, the project's other work, including de-tunnelling, bank profiling and riparian management work was done to a high standard and can all be expected to have a positive impact on in juvenile salmon numbers in Allow River Catchment. However, this was outside the scope of this evaluation given the time scales involved. It is likely that the real benefits of the measures undertaken by the DuhallowLIFE+ project will only be realised in the coming years. In the case of Atlantic salmon, the expected timeframe for the realisation of positive impacts may be anywhere between 5 and 7 years.

7.9 Impact on European Otter

The presence of riverside riparian habitat and the availability of suitable food are the key factors determining the abundance of otters. The LIFE project's work improving riparian habitat has been greatly beneficial to otter. It was stated that the otter holt locations were determined by the original otter survey work in 2011. Based on the survey findings the LIFE project targeted areas where otter activity as noted to be absent or low during the survey itself. The actual individual locations took into account potential for disturbance, flood plain height, potential for food, etc.

In a similar way to other projects, what is clear is that the installation of artificial holts plays a bigger part in raising awareness among landowners than in providing new of additional resting sites for otter. This was evident to the evaluators in the case of DuhallowLIFE+.

7.10 Impact on other species and habitats

Awareness raising and educational work carried out by the DuhallowLIFE+ project have highlighted the importance of habitat protection and enhancement in the Upper

River Blackwater Catchment. The wider community outreach work undertaken by DuhallowLIFE+, coupled with extensive stakeholder and schools' engagements are an extremely positive step in the long-term protection of the Allow catchment. The positive engagement with landowners in particular is of significance in terms of gaining the trust and confidence of the local farming community which is fundamental to the success of any initiative involving decisions over people's private lands and livelihoods. The DuhallowLIFE+ project is to be commended for its efforts in this regard.

7.11 Relevance for environmentally significant issues or policy areas

All of the work carried out under the DuhallowLIFE+ project has had a direct positive impact on the conservation objectives of the Allow Catchment and the Habitats Directive Annex species, for which it was implemented i.e. freshwater pearl mussel, European otter, Atlantic salmon. However, the broader benefits of this in relation to the Habitats Directive are the skills, procedures and networks gleaned from this project which will catalyse additional work within the wider Blackwater Catchment and other catchments in Ireland. The supporting documentation, such as the readily available, advice leaflets and guides will have direct positive impacts on Habitats Directive species and habitats.

7.12 Long-term environmental benefits

It is likely that any objective evaluation of the implementation of the project actions carried out under the DuhallowLIFE+ project, would testify to the immediate positive impacts in the Upper River Blackwater SAC. It is certainly evident to this evaluation, not only with the species of conservation importance targeted by the project, but also and perhaps more importantly in the manner by which the DuhallowLIFE+ project acted as a catalyst to a ground shift in the public's understanding and sense of responsibility towards the Allow Catchment. The longer-term benefits of this shift are difficult to quantify in this short evaluation. What is apparent from this review is that environmental awareness programmes and community outreach work, of the nature and extent undertaken on the ground by DuhallowLIFE+, will greatly support the implementation of the AfterLIFE programme and ensure greatly improved levels of stakeholder involvement.

Continued Threats to Freshwater Pearl Mussel

Threats to the long-term sustainability of freshwater pearl mussel remain and it will be the role of the AfterLIFE Conservation plan to minimise and eradicate these threats. This will only be done with the open and transparent support and cooperation of the competent authority, namely the NPWS. IRD Duhallow can support the competent authority by working to address complacency amongst the general public within the catchment to environmental issues and any lingering opposition to practical enhancement solutions.

Sustaining Atlantic salmon population

The maintenance and enhancement of water quality, migratory routes and spawning beds are essential to the longer term sustainable management of Atlantic salmon populations within the Allow catchment and in other Irish rivers. These objectives need to be a priority in the delivery of the DuhallowLIFE's AfterLIFE Conservation Plan. They are not only important for the conservation objectives of the Upper River Blackwater SAC, but also for a sustainable angling based tourism industry. IRD Duhallow has long supported this sector which in turn supports the rural economy within the catchment. It is therefore critical that this is addressed as part of the Allow catchment management plan. This should include monitoring work on Atlantic salmon numbers and the development of clear management guidelines to inform stakeholders and strengthen the recovery of the Atlantic salmon within the Upper River Blackwater SAC.

Sustaining the European Otter in the Catchment

A key recommendation of this evaluation is that IRD Duhallow should foster closer working relations with local NPWS staff to ensure that the conservation status of the SACs in relation to European otter are maintained and enhanced. This will include working with stakeholders, including the farming communities and land developers to ensure the long-term viability of the otter population in the Allow Catchment. It will also provide support in relation to the provision of appropriate sustainable management advice for developments or modifications along the riparian corridor. The DuhallowLIFE After LIFE Conservation Plan should focus time and effort on the creation of wildlife corridors and reconnection of fragmented habitats, primarily through tree planting and creating scrub cover. The maintenance and enhancement of healthy populations of Atlantic salmon and freshwater pearl mussel will also support the population of European otter within the catchment.

Improving water quality through sustainable water management on farms

Addressing the impacts of inappropriate agriculture practices in the Allow catchment and its tributaries was seen as a key objective of DuhallowLIFE+. The need for improved practices are being addressed, not only through work programme of the DuhallowLIFE+ project, but also through initiatives to which the project was linked including the EPA and the Water Framework, Nitrates and Habitats Directives, as well as through locally led agri-environmental programmes. Improving water quality is a key element in the ensuring the long term improvement of the catchment for the freshwater pearl mussel, migratory fish species and European otter.

7.13 Long-term economic and social benefits

The primary concern of the DuhallowLIFE+ project was the conservation of protected species through enhancement measures and the development of sustainable management planning for the Allow Catchment. However, there are also long-term economic benefits. The “do nothing scenario” would have resulted in a continued

decline in the conservation status of the Allow Catchment and species of conservation importance. The DuhallowLIFE+ project has assisted in the rejuvenation of the Upper River Blackwater catchment. As a result of this, the long-term economic benefits are more positive and would be primarily based around tourism and agriculture.

The Blackwater River is one of the most important salmon angling rivers in Ireland and is renowned for its high paying angling visitors. Having a sustainable Atlantic salmon fishery in the region not only protects a species of conservation importance, it also provides an important source of income for the local rural community. Recent research by Inland Fisheries Ireland, highlighted the importance of angling for Irish tourism, providing €750 million per annum to the Irish economy and supporting 10,000 jobs in rural Ireland. The maintenance of a sustainably managed catchment, in both the Upper River Blackwater and the wider Blackwater catchment, would improve the appearance and sustainability of the area for rural and agri-tourism and offer opportunities to encourage other tourists to the area. An increase in rural tourism and eco-tourism could provide for a more sustainable catchment based economy. This in turn has the potential to enhance local employment opportunities and retain family members working in the catchment and reduce the risk of outward migration from the area.

The DuhallowLIFE+ project is also providing social benefits. From interviews with key stakeholders as part of this evaluation, it is apparent that these include a sense of pride in the Allow Catchment and a heightened sense of well-being.

7.14 Replicability, demonstration, transferability, cooperation

As noted previously, significant indirect impacts have emerged from DuhallowLIFE+'s work. A real positive local energy has emerged which can in many respects be linked to a real sense that DuhallowLIFE+ provides a possible alternative approach to traditional science based catchment management. The DuhallowLIFE+ process, with the local community at the centre as an active and willing partner, provides for more durable and effective implementation on the ground. The lessons learnt, together with the material generated from the implementation of the DuhallowLIFE+ project, which should include best practice guides and a detailed catchment management plan, would greatly assist and facilitate this process in other catchments.

DuhallowLIFE+ has been at the forefront of developing networking linkages with a wide range of parties in Ireland and across Europe. This evaluation has seen the tangible results of the networking effort. DuhallowLIFE+ has helped to link the work of researchers and academics from Irish third level institutions as well others from the UK and the wider EU. Most importantly, this evaluation notes the two-way nature of this process with important networking linkages made with the EPA and TRAP. This work has helped to shape the future direction of catchment management in Ireland.

The success of DuhallowLIFE+'s work to control Himalayan balsam was one of the key documented achievements of the project. The work, and more importantly the approach, to control the species has important implications for other rivers and catchments across Britain and Ireland. The success of the work to control Himalayan balsam and effectively remove it from a catchment has important implications for local authorities, land owners and community groups and individuals. It highlights the value of early intervention and a coordinated approach to deal with Himalayan balsam in their area. The lessons learnt by the DuhallowLIFE+ should be incorporated into training programmes, management planning and control/treatment guidance to all relevant bodies, groups and individuals.

7.15 Future conservation and management of the Upper River Blackwater SAC

The future conservation and management of the Upper River Blackwater SAC should involve a collaborative approach between the statutory and non-statutory organisations that have been involved in the DuhallowLIFE+ Project. A key recommendation of this evaluation is that, following the success of the project in enhancing the conservation status of the SAC, all organisations which have been centrally or peripherally involved in the project now need to commit to the ongoing implementation of the AfterLIFE phase of the DuhallowLIFE+ project. The comprehensive but clear AfterLIFE Conservation Plan needs to be finalised that outline the need for an ongoing commitment of all parties involved including the component authority, NPWS.

Section 8: Annexes

- 8.1 Terms of Reference of Evaluation
- 8.2 Listing of Key Interviews Conducted
- 8.3 Details of project documentation included in evaluation