Living Laboratory Study Visit Report



Finland 2017

T1.3 Sharing Path Management Knowledge, Exchange of Experience and Learning, **T2.2** Upskilling & Toolkits

by Newry Mourne & Down District Council and Mourne Heritage Trust with Metsähallitus, Parks & Wildlife Finland







Finland Living laboratory Study Visit Report A Practitioners Perspective,

12 - 15 September, 2017

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Introduction

This activity delivers outputs under T1.3: Living Lab Study Visits, but also contributes to T2.2 regarding the development of path assessment toolkits/templates suitable across all project partners.

ASCENT partners, including representatives from Donegal County Council in the Republic of Ireland; Newry, Mourne and Down District Council in Northern Ireland; Mourne Heritage Trust (sub-partners of Newry, Mourne and Down District Council); Soil Conservation Service of Iceland and Metsähallitus Parks & Wildlife, Finland met in September 2017 in Kuusamo, Finland, as part of consistent efforts to share knowledge and experience between member organisations.

The trip was hosted by Parks & Wildlife Finland (PWF) and included visits to the recently-opened Hossa National Park and Riisitunturi National Park. Key themes included: how readily accessible should wild areas be for visitors keen to explore them; what improvements should be made in order to make sure that visitors of all capabilities can enjoy these wild areas; and to what extent is it acceptable to modify wild areas to achieve access for all. Additionally, the implementation of management systems was explored through thematic seminars, including the assessment of utilising Geographical Information Systems (GIS), and LAC (Limits of Acceptable Change) methodologies in practical trail management.

The trip also provided an invaluable opportunity for practical knowledge-sharing activities, where ASCENT rangers from Northern Ireland and Finland participated in a two-day path work project in the spirit of sharing experience and learning new skills.

1.1

Study Trip Preparations and Documentation

Preparations for the Finland study trip included assembling equipment necessary to document the trip for ASCENT reporting and knowledge-sharing processes required through Project T.1. Objectives for International Learning and Knowledge Development. This included the following items:

- GoPro Hero 4 camera and waterproof casing
- Panasonic HX-WA30 waterproof camera
- Nikon DSLR camera and tripod
- Garmin GPSMap 64s
- > Spot Gen3 Satellite Messenger
- Zhiyun Gimbal Handheld camera stabiliser: Crane 3-axis

Given the international dimension, it was important to ensure that the study trips were effectively documented to facilitate easy communication of the key issues, such as overcoming language barriers, to engender learning and development of shared initiatives and activities.

This equipment made it possible to capture video and photographic evidence of knowledge transfer gained throughout the trip and to compile findings in an effective format. Utilising media and editing footage to draw out key findings to add subtitles and to add contextual information in the form of simple text was found to be an effective way to extract knowledge from this trip. Social Media and file transfer platforms (e.g., Facebook, YouTube, OneDrive, Cloud) were utilised to distribute completed media to ASCENT partners.



1.2

Study Visit Locations and Itinerary

- Monday 11th September: Steering group meeting
- Tuesday 12th September: A.M.: Site visit to Hossa National Park hosted by PWFand Park Superintendent Kerttu Härkönen, including visit to Muikkupuro and meeting Field Work Manager, Leena Jartti, and PWF wildlife rangers. Also included a visit to Julma Ölkky to view a suspension bridge, metal staircases and extensive rock work implemented in 2016.
- Tuesday 12th September: P.M.: Thematic seminar at Luppolinna based on PWFplanning implementation, and an introduction to LAC methodology.
- Wednesday 13th September: Site visit to Riisitunturi National Park. Introduction to Planning Officer, Pekka Veteläinen PWF, and a 10km hike along newly-developed park trail.
- Thursday 14th September (Finnish and Northern Ireland partners): Site visit to Oulanka National Park including skill and knowledge sharing activity assisting PWF rangers complete construction of walking trail.
- > Friday 15th September (Finnish and Northern Ireland partners) A.M.: Continuation of skill and knowledge sharing activity assisting PWF rangers' complete construction of walking trail.
- > Friday 15th September (Finnish and Northern Ireland Partners) P.M.: Site visit to Oulanka Life-funded Hiidenlampi Nature Trail (5km) trail led by Field Work Manager, Leena Jartti and to the Rytisuo Nature Trail.

Site Visit Background Information

2.1

Finland Land Authorities

2.1.1

Metsähallitus

Metsähallitus is a state-owned enterprise that operates in the administrative sector of the Ministry of Agriculture and Forestry and is steered by the Ministry of the Environment. It uses and develops state-owned areas for commercial purposes by way of creating a versatile bio-economy through forestry, property development and national park management, which, in turn, generates revenues for the Government.

The enterprise fulfils many public administration duties by incorporating ecological, financial, social and cultural sustainability within their commercial endeavours, and acts as an umbrella to manage all aspects of land use only on state-owned land in Finland.

The management of national parks and other protected areas is funded mainly from tax money (and EU projects). See: http://www.metsa.fi/web/en/metsahallitus/logo

2.1.2

Parks & Wildlife Finland

PWF is a publicly-administered organisation under the umbrella of Metsähallitus, which protects and manages species, habitats and cultural heritage in state-owned protected areas, and also provides sustainable tourism opportunities and outdoor recreation services.

z.z Site Overview

The Kainuu region of Finland is dominated by rugged coniferous forests littered with aspen and birch trees. These are home to many of the country's most iconic species, including reindeer, elk and bears. The national parks found in this region showcase and protect unique aspects of the area's biodiversity, such as the pinedominated forests and expansive waterways of Hossa, or the hills and hanging bogs which are characteristic to Riisitunturi.

It is the responsibility of PWF, under the umbrella of Metsähallitus, to manage the national parks by way of providing high-quality recreational opportunities for visitors, while also safeguarding the habitats, biodiversity and overall wilderness of these areas against human impact.

A key challenge for PWF is the balance of encouraging sustainable tourism and providing high-quality recreation opportunities, in a way which does not diminish the remote characteristics of the parks. During this study trip visit, three key parks were visited, and the challenges within each site were showcased: the newly-opened Hossa National Park, Riisitunturi and Oulanka.

Study Trip Key Findings

3.1

Tools and Techniques

The majority of path work carried out within national parks in the Kainuu Region is completed by the PWF path team, delivered through national government funding and hunting/fishing permit fees, but also occasionally through outsourced funding, e.g., European Commission LIFE Funding provided path work and visitor interpretation materials for trails within Oulanka National Park. LIFE funding has been used for conservation work and other EU funds for some of the path works. Income from fishing and hunting permits is not used for path maintenance.

The agency practises natural resource planning in order to tie in the various industries linked to the national park resources, such as nature conservation, forestry, recreation, eco-tourism, real estate development and the sale of soil resources. Path development projects are therefore planned with the overall long-term planning of park areas in mind, in order to achieve the sustainable use of state-owned land.

PWF path teams operate on a seasonal structure to meet path network development and maintenance demands. Path resources and materials are gathered and moved to the site during the winter months using snowmobiles and ATV vehicles, and physical path work is then completed once snow cover has cleared, using resources easily at hand. Tools used to complete the work include: hand tools (excavator shovels, pinch bars, hammers etc.) and power tools, such as hand-held drills and pneumatic drills (for excavating bedrock).







3.2

Path Infrastructure

A major resource for PWF paths was wood. Climatic conditions in Finland mean that timber is high quality and long lasting, with 17 years' shelf life compared to other countries, such as Northern Ireland, where native timber in outdoor conditions may only last for 712 years, depending on treatment. Wooden structures, such as staircases and boardwalks, were therefore prevalent throughout PWF-managed areas.

These proved to be particularly effective in managing visitor infrastructure through sensitive areas such as blanket bog and mires, or culturally-important hay meadows, where raised wooden bog paths could guide visitors over habitats with minimal risk of species damage.

Paths constructed near national park centres, car parks, or those intended for enhanced user accessibility were usually wider and constructed out of gravel/stone, which provided an easier surface to walk on. This provides access for wheelchairs and for those with limited mobility, enabling a wider visitor base to enjoy the area.

Drainage was achieved in gravel/stone paths through use of sloping paths downhill and implementing retaining structures, which allowed water to 'sheet across' the path whilst minimising the impact of fluvial transportation. In wetter areas, drainage was enhanced through the use of water bars.

Path borders and retaining structures were usually constructed out of felled wood/untreated timber, which created a natural and visually-striking border, helping to blend paths into surrounding landscapes while also encouraging habitat improvement as mosses and lichens take root on the wooded borders.

In the 1990s, there was a new policy launched in protected areas called 'litter-free hiking'. All bins were taken away and a lot of effort was put on educating people on the subject: 'What you manage to carry into the forest, you must be able to carry out, too'. This is a matter of reducing maintenance and pollution, noise, traces on the ground etc. There were no bins in these areas and visitors brought back home whatever they couldn't burn or what couldn't be placed in composting toilets. However, in some of the most popular sites, there were bins at entrances.

3.3

Visitor Interpretation and Facilities

Visitor interpretation and facilities were present in each park visited in the form of signage, trail information (including cultural/historic facts), visitor centres, cafes and bathrooms, car parks, rest huts and picnic/seating areas. A high degree of thought was put into making sure that the visitor infrastructure matched the landscape and overall feel of the area. Rest huts and out-house facilities attracted resting hikers to specific areas, making litter and campsite debris easier to manage. Most infrastructure was created out of native wood sources for further authenticity.



Figure 7: Rest huts are centric to the Finnish outdoor ethos, with facilities available for rest, refreshment and cooking throughout all the National Parks.



Figure 8: Signage was purposefully rusted to recreate a rustic aesthetic in keeping with the surroundings.

Case Study 1

Riisitunturi Park Trail

This case study reviews the issues in constructing paths, which were witnessed during a site visit to Riisitunturi National Park. These issues were caused by limited staff resources, as well as problems that can arise when working within seasonal constraints, such as restricted access, adverse weather conditions and heavy snow cover, to path materials and discrepancies in planned route implementation. Snow cover is used in all of Finland (where there is still snow) to minimise the impact of maintenance and vehicles on the ground. Most materials that need to be taken out on site are moved in the winter, such as emptying toilets, bringing in fire wood etc. The system usually works well and is essential for reducing traces on the ground. There was nothing exceptional in that sense in Riisitunturi. For some reason, however, the aggregate was, unfortunately, laid in the wrong spot.

Attempts to rebuild parts of a 10km trail during heavy snow cover resulted in the path 'missing the mark' in terms of following the original route, often by a few metres. The pre-planned route had been marked by a series of flags and painted tree markings in summer months, however, thick snow over the winter period had made tracing the original line more difficult to follow. This particularly affected parts of the path with steep gradients which, combined with a lack of drainage control measures, quickly led to path 'wash out' of materials, incidents of water logged areas and a path line not following original erosion/path lines, leading to wider areas of habitat degradation.

Path problems were attributed to limited staff resources, as the PWF path team assigned the duty also had responsibility for several other parks, each of which required regular trail maintenance. The job had therefore been rushed, with materials being laid on the perceived path line despite heavy snow cover.





The immediate issues, which arose, served as a good demonstration of what happens when the optimum path is compromised during construction.

However, the issues arising can be easily fixed over the summer months through the construction of appropriate trail borders, which will prevent material wash-out from paths during bad weather, and the translocation of the dispersed aggregate back onto the trail line. Water bars should be placed depending on run off flow regularly along the path, particularly in areas of steep gradients. The use of volunteers or trainees could be considered by PWF to help cope with the path maintenance workload, and would allow a consistent effort which can be utilised to employ a 'stitch in time' method of repairing paths before damage becomes widespread. ASCENT partners in Northern Ireland and Iceland have employed the use of volunteers to great success, with Iceland creating opportunities for path work 'working holidays', and Northern Ireland facilitating volunteering schemes to build capacity for ongoing maintenance of popular trails.

Case Study 2

Julma Ölkky

Ölökyn Ähkäsy is a circular canyon route (established about 15 years ago) taking hikers on a strenuous 10km trek along both sides of the Julma Ölkky canyon. The area is famous for the Värikallio rock paintings, located nearby at lake Somerjärvi and thought to be at least 3,500 years old. The trail is described as 'challenging', with a 5-6 hour hike along the cliff edges with elevation changes, and places where the trail runs through mire habitats. The route also offers many points of interest, such as Colour Rock, and many scenic views of the valley rift and surrounding landscapes.

During the site visit, the ASCENT party travelled by boat to where the trail crosses over the rift, courtesy of a metal and cable bridge across the two cliff faces. It was discussed how the two rift valley routes had been combined to a larger, circular route through the creation of the bridge, and the difficulties in implementing the work. Ölkyn Ylitys is the new 5km path that was opened for Hossa National Park's opening in 2017 and is part of Finland's ongoing national strategy for sustainable tourism development. This path crosses the lake on the new suspension bridge. The ASCENT team particularly noted the difficulties in creating routes to the bridge from the rift cliff faces, particularly on the west side of the valley, where the path surface required areas of bedrock to be drilled and removed in order to widen the path away from cliff edges. Additionally, the east side of the rift required a galvanised staircase and the use of concrete secured rock in order to guide walkers over scree and rock deposits, which added difficulties to the task. However, Head Rangers stated that the location chosen for the bridge and stairs was thoroughly discussed with all involved, and there were no non-problematic spots to choose from.

The redevelopment of this pre-established trail to fit new infrastructure and a new circular system was particularly of interest to ASCENT project representatives from Northern Ireland, as in the Mourne Mountains, a proposed development of a gondola lift system and a new visitor centre within the mountain range will require new paths and tourist infrastructure to fit around the development. They will, therefore, face similar challenges as Julma Ölkky with regard to anticipating increasing visitor pressures and responding efficiently to change.

On the day of the site visit, an incident involving a hiker falling off the east side cliff edge brought up an important discussion on visitor access and safety. The route predominately follows sheer cliff faces, and phone signal is only available on the highest parts of the trail, which meant that the injured walker's companions could only seek help by flagging down passers-by (and calling down to the study trip boat passengers) to assist. Combined with increasing visitor pressures caused by the area's national park status, safety and incident responses are important considerations within new developments, particularly if they have the capacity to attract new types of visitors, such as inexperienced walkers or families.



Figure 11: Top of the Galvanised Staircase constructed to guide walkers over heavy rock and scree deposits to the bridge.

Case Study 3

Floating Mires

Riisitunturi National Park is part of the large taiga forest zone on the northern edge of the Eurasian continent. Most of the park is covered with candle-like spruces and thick moss. The area also contains rare hanging bogs with a high scientific value. The mire vegetation is intricate, consisting of spruce and pine bogs and a number of plant species found only in fell habitats. The area also supports a wide host of biodiversity, including northern bird species, reindeer and brown bear.

A key challenge within this site is navigating paths through the park's numerous waterways, lakes, ponds and mires. Although it is important for these features to be represented within the trail routes, the waterlogged areas can present complications for paths, which must be dry and well drained, inconspicuous and fit for purpose.

Heavy foot traffic can also be troublesome for sensitive and intricate mire species, such as mosses and lichens. Simplistic, raised timber paths have been found to be a cost-effective and suitable means to guide visitors over sensitive habitats, with relatively little risk of footfall erosion or trampling occurring. These timber paths are easily built and maintained, and blend in with the rural aesthetics of the landscape. Duckboards, or timber paths, are an ancient way of crossing mires. They have been built since axes and saws were invented to connect villages, meadows and hunting/fishing areas. In many places, modern path lines follow ancient routes of duckboards.

In Riisitunturi, an experimental path was constructed as an alternative to a previously derelict raised boardwalk at the site in an attempt to create a more robust and wider trail over mire habitats, for areas which receive higher visitor densities (such as paths closer to park entrances and amenities). The path built was just over a metre wide and consisted of a trenched gravel path floated over artificial netting. Water was controlled through the use of back drains which caught surface runoff, and navigated the drainage through frequent timber water bars built into the path. Plastic piping was also used under the path to help navigate the water flow under the path. Timber edging was also placed intermittently to account for footfall erosion.



Figure 12: Trail through hay meadow at Riisitunturi, demonstrating a path technique designed to guide visitors safely across sensitive habitats



The outcome of the experimental path was mixed. The overall aesthetic fitted in well with the landscape, while the use of native timber for features such as water bars and edging helped to blend the path into the habitat.

However, the path was problematic in that it caused disruption to the mire drainage system, which caused some damage to the habitat, and particularly to the vegetation composition directly below the constructed path. Additionally, in some places it was difficult to control the flow of surface runoff, which led to areas of trail creep and path widening.

Due to the above issues, the experimental path may be less suitable for the site in question than a raised boardwalk system, which may actually have less impact on the habitat below than what replaced it.

Skill and Knowledge Sharing

The last component of the Finland study trip was an opportunity for path teams from Northern Ireland and Finland to work together on a path work project in order to share experience and gain new knowledge.

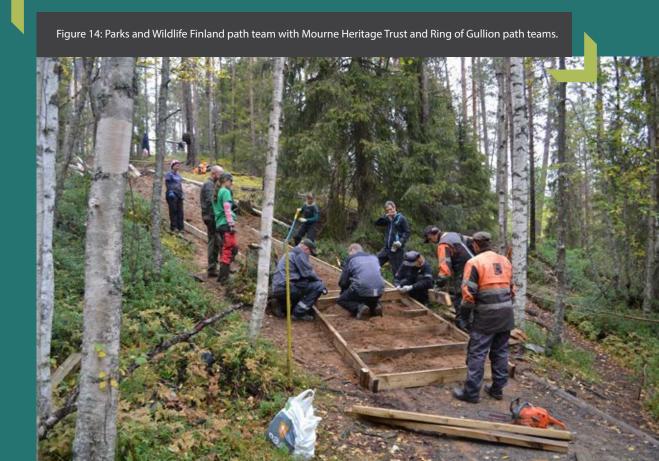
The project took place in Oulanka National Park, where PWF path work employees were joined by representatives from Newry, Mourne and Down District Council project partners, who manage Slieve Gullion and Mourne Mountain landscapes in Northern Ireland.

The two days consisted of developing a wood and gravel outdoor staircase along the Kiutaköngäs trail. This was to replace the original wooden staircase, which was found to be problematic in the wintertime due to snow and ice presenting a danger for walkers. The route is used by approximately 100,000 visitors per year across all seasons, therefore emphasis was placed on maintaining an easily accessible route for all, and reducing risks to walkers.

This contrasted with the Northern Ireland's path work team's experience, as paths in their managed areas are usually maintained for the preservation of wilderness and protected habitats, with visitor experience and safety a secondary concern.

Northern Ireland path workers gained knowledge and experience in the use of wood as a path material and developed carpentry skills by helping to build the staircase. Knowledge was also gained from witnessing tools used by the PWF path team, such as ATV and trailers used to transport materials; chainsaws to cut and trim wood; plastic buckets to transport gravel; pinch bars; spirit levels; tampers; mallets; shovels; spades and electric drills. Materials used to construct the path consisted of gravel, wood and soil. The project was documented through the use of cameras and was presented through social media via a live video stream, which has proven to be a popular way of documenting PWF activities for the general public.

The result of the knowledge-sharing activity enhanced relationships formed between the ASCENT path work teams, who were able to mutually benefit from the bespoke skills and knowledge shared during the two days. The mixed range of abilities and experiences led to new, innovative tools and path work ideas being developed and shared within the group.



Seminar Outcomes

On Tuesday 12th September, ASCENT project partners attended a thematic seminar hosted by PWF. The topics covered in this seminar were:

- Implementation planning and GIS systems in PWF
- Introduction to Limits of Acceptable Change (LAC) Methodology with practical examples

The first lecture was presented by staff members from PWF and discussed the Geographical Information Systems (GIS) utilised by the organisation, including Reiska and PAVE. Reiska was an old system that has been replaced by PAVE. The lecture demonstrated the effectiveness of the systems for the purpose of mapping national park trails, and of logging data sheets within a single system. The seminar also gave brief insight into the logistics of utilising these GIS systems, such as issues regarding data, updating processes and general maintenance. Finally, the talk concluded with a discussion on implementation planning based on GIS, and a demonstration of its usage for client interface systems, such as excursionmap.fi.

Mr Matti Tapaninen, Regional Manager for PWF, gave the second lecture on LAC methodologies with regard to national park management. Practical examples were given, demonstrating the importance of indicator-based management systems and the usage of LAC as a measure of sustainability, particularly when considering trail management. The lecture concluded with some practical examples of how the methodology could be used to meet future sustainability needs of forest parks, and to enable overall sustainable tourism development for Finland and other countries.

Chapter 6

Concluding Remarks

The ASCENT study trip in Finland provided a worthwhile opportunity for project partners to meet, share experience and gain new knowledge suited to bring individual projects forward in a cohesive way. In particular, it was highly beneficial for project partners to review the trails of the recently-opened national park

at Hossa, and to note the benefits (such as high user accessibility), and difficulties (such as with the Julma Ölkky case study) that can occur with trail development.

In particular, it was interesting to note the contrast between the ethos championed during this trip, such as encouraging increased visitor access and infrastructure for the purposes of sustainable tourism development, and the ASCENT study trip to Scotland (March 2017), in which the key priority for path development was conservation purposes and to sustain remote areas in the face of, rather than for, increased visitor access.

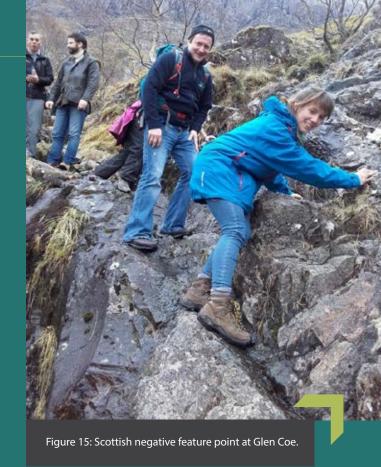
These contrasting agendas present an interesting question as to what the overall priority of trail management should be. Is it more important to use path work as a means of conserving wilderness and protecting remote areas from visitor access, or should sensitive path construction be used to open up areas for visitors in order to sustainably encourage tourism and to create an appreciation of these green spaces for the purposes of social, economic and, possibly, environmental benefits? The trade-off between preserving wilderness and encouraging tourism has been a consistent theme running through the ASCENT project, which will be further explored throughout the project.

An additional theme of this trip which has been revisited was that of safety. The Julma Ölkky case study gave mention to the concern that increasing visitor infrastructure and facilities may give a 'false sense of security', and encourage less-experienced visitors to undertake more challenging routes, believing that safety is implied by the presence of amenities. In contrast, visiting Glen Coe during the Scottish study trip demonstrated the other side of the coin, where challenging terrains were introduced as 'negative feature points' aimed at making hikers aware of the difficulty of the trail at an early point without the need for signage and to deter less- experienced visitors from travelling on to possibly more difficult terrain. The contrast between some ASCENT partners wishing to make their trails safer compared to other partners, who believe that safety is secondary, has been a recurrent theme within the ASCENT project, and again should be addressed in depth. Another point of note, of particular interest to the Northern Ireland partners, was that the PWF's management of Kuusamo's national parks, under the umbrella of Metsähallitus, provided an interesting contrast to land management within Northern Ireland. The overarching governmental authority to manage much of Finland's wilderness allowed for stakeholder interests in natural resources and forestry (albeit there is no forestry in national parks) to be carefully managed with consideration to the park's value as a public resource and as a recreational area. Therefore, long-term planning could be devised, with logging, forestry and other enterprise actions managed around national park operations. This is juxtaposed with other ASCENT project partners, where areas have a number of stakeholders and no overarching management authority.

Despite this, path management in Finland was subject to key issues similar to all project partners; financial restrictions, a shortage of trained staff (in Finland's case leading to pressure for one team to cover multiple national parks); the seasonal aspect of path implementation and questions of trail design. Path issues unique to Finland included navigating trails through mire and hanging bog habitats, which require sensitive drainage regimes, and spreading path team resources across a number of national parks.

Team-building and knowledge-sharing activities conducted with PWF and Newry, Mourne and Down District Council employees provided valuable opportunities for path workers to gain new knowledge and perspectives on trial work, and to share experiences with each other. In particular, a key benefit to this exercise was the fact that it is a step closer to establishing an international path worker support network, allowing for future knowledge-sharing activities to occur.

Seminars delivered by PWF staff provided an interesting opportunity to consider future path management regimes in the face of emerging technological and logistical advancements. Bespoke GIS and LAC methodologies may prove to provide a more systematic means of implementing path work, and may allow for standardised methods of providing sustainable upland management.



Chapter 7

Funding Details

ASCENT (Apply Skills and Conserve our Environment with New Tools) receives European funding through INTERREG VB under the Northern Periphery and Arctic Programme (NPA) 2014-2020, to address the environmental challenges in seven upland areas, all of which face challenges associated with increased visitor numbers and unregulated access

Chapter 10

More Information

The above information was gained and interpreted through ASCENT project documentation conducted by the Mourne Heritage Trust (MHT) on behalf of Newry, Mourne and Down District Council. Video interviews and further visit documentation linked to this report are available by contacting Matthew Bushby at matthew.bushby@mourne.co.uk, or by contacting our offices at Silent Valley Gate Lodge, 74 Head Road, Kilkeel, Co. Down, Northern Ireland, BT34 4PU, 028 417 65489.

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