



# Repair of the Devil's Ladder Access Route to Corrán Tuathail

## **FEASIBILITY STUDY**



SUPPORTED BY THE HERITAGE COUNCIL



LE CUIDIÚ AN CHOMHAIRLE OIDHREACHTA

# Devil's Ladder Feasibility Study

## Table of Contents

- 1.1 OVERVIEW
- 1.2 ENVIRONMENTAL DEGRADATION
- 1.3 CARRYING CAPACITY AND MANAGEMENT
- 1.4 THE STUDY AREA
- 1.5 GEOLOGY, SOILS AND RAINFALL
- 1.6 LAND OWNERSHIP
  
- 2.1 THE PROJECT SCOPE
- 2.2 PROPOSED PATH TYPE
- 2.3 PROJECT TEAM
- 2.4 PROJECT FUNDING
- 2.5 MOUNTAIN MEITHEAL
- 2.6 PROJECT COSTS AND WORK ESTIMATES
  
- 3.1 TECHNICAL REPORT
  - SECTION 1. THE APPROACH
  - SECTION 2. THE LOWER SECTION OF THE  
DEVIL'S LADDER
  - SECTION 3. THE SCREE AND BOULDER  
MID SECTION
  - SECTION 4. THE TOP 30 M
  
- 4.1 COST ESTIMATE
- 4.2 LABOUR REQUIREMENT
- 4.3 PROJECT MANAGEMENT
- 4.4 FUNDING
  
- APPENDICES

Study was undertaken in September, 2003.

# Devil's Ladder Feasibility Study

## 1.1 OVERVIEW

One of the most popular and rapidly growing recreation activities in Ireland is hill-walking. The increase in hill-walking has contributed greatly to the economic development of rural areas and has improved the quality of people's lives through physical exercise and through experiencing the outdoors. The popularity of hill-walking has increased at an exponential rate over the last decade bringing more and more users each year to explore Ireland's beautiful mountain scenery. This brings considerable economic impacts to the tourism sector of a region such as Kerry. However there is also a detrimental impact of this growing trend in the deterioration of the mountain environment due in part to trampling and human induced erosion.

The Macgillycuddy's Reeks are a major hill walking destination with several mountains attaining Monroe status (over 3000 feet) and of course Carrauntoohil the highest peak at over 1039m (circa 3400 feet).

## 1.2 ENVIRONMENTAL DEGRADATION

As mentioned above the increase in use has also had negative effects, most notably on the natural resources of the area. Paths that were once travelled by a few are now exhibiting the effects that hundreds of walkers can have on an area that was not built or managed to sustain this type of use. There is a growing concern among Ireland's landowners about liability issues, the increase in soil degradation, and the overall social effects that comes with an increase in use.

## 1.3 CARRYING CAPACITY AND MANAGEMENT

Path Managers would say that degraded paths develop when path use exceeds the paths natural carrying capacity. We see in adjoining areas where lands under state ownership (Killarney National Park) are being managed to tackle this issue by path construction, repair and maintenance. This degradation is a serious environmental problem because of the direct effects on vegetation, hydrology and soils. In addition, degraded trails may have indirect effects on wildlife, site aesthetics and other resource values. **In the most extreme case, soil degradation as is evidenced on the top 30 m of the Devil's Ladder may have serious safety implications for the user.**

Generous private landowners have allowed public access to this area for many years but cannot be expected to manage the paths for public use. As mentioned earlier repair and path construction is currently underway or in planning in adjacent National Park and Wildlife Service lands. It would, in our view, be remiss if this important route to Ireland's highest mountain was not managed in a way that enhanced visitor enjoyment and safety while protecting the natural environment from further degradation.

# Devil's Ladder Feasibility Study

## 1.4 THE STUDY AREA - THE DEVILS LADDER

The Devil's Ladder is an integral part of the most popular hill-walking route to Corrauntoohil, Ireland's highest mountain. During our field work in early September 2003 we estimated that an average of over 100 people per day were using this route to access Corrauntoohil.

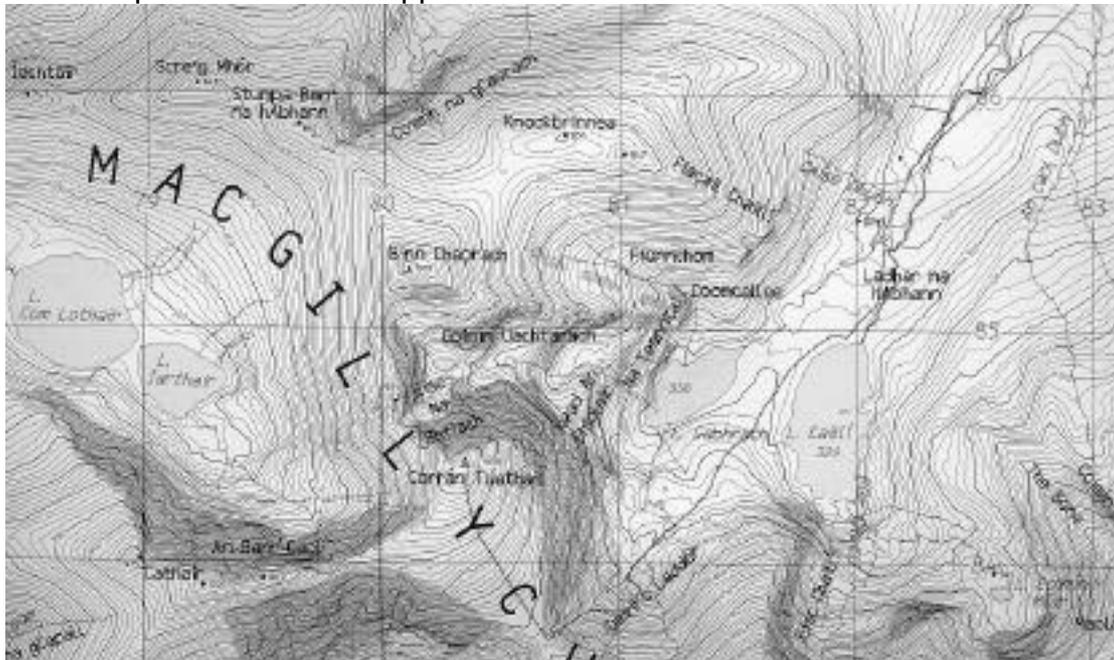
There is clear evidence that this is a long established route. An examination of 6" maps <sup>1</sup> show a well established track or rough road, however this is no longer evident on the ground and walkers now take a more direct route up the gully. There also exists cairns on the approach to the Devil's Ladder and on the track from the col above the Devils Ladder to the summit of Corrauntoohil.

## 1.5 GEOLOGY, SOILS AND RAINFALL

The underlying geology is old red sandstone with some glacial drift of this parent material. The soil type in the area are peaty podzols with associated peat. Mean annual rainfall in these mountains can range between 2400 and 2800 millimetres per annum with precipitation occurring on over 225 days.<sup>2</sup>

## 1.6 LAND OWNERSHIP

The land is held in an undivided commonage by four shareholders. The shares are held as 2 by 1/3 shares and 2 by 1/6 shares. Details of the land ownership are included in Appendix 1



**Map 1. Devils Ladder – OS and Dermot Bouchier Hayes Commemoration Trust Map.**

<sup>1</sup> Ordnance Survey – 1906 survey; Kerry sheet 73 – (See Appendix I1)

<sup>2</sup> Atlas of Ireland - Royal Irish Academy, Dublin 1979.

# Devil's Ladder Feasibility Study

## 2.1 THE PROJECT SCOPE

The scope of this project is to examine the Devils Ladder Route (the "Tourist Route") to Carrauntoohil from grid reference **V 8150 8454** to **V 8070 8370**.

The report sets out to examine the path and its environs to:

- Assess the technical issues pertaining to this route in terms of **protecting** the environment, managing **safety** issues and outline possible **solutions**.
- Estimate the likely **financial costs** and the **labour requirements** associated with undertaking this project.
- Propose **management arrangements** and **possible funding methods** that could deliver such a project with particular reference to the local landowners.

## 2.2 PROPOSED PATH TYPE

The proposal is to assist the management of the path as a **primitive or type IV route** See Appendix III<sup>3</sup>. The path will be for non motorised use by hill walkers.

This is in line with the objectives of the Mountain Meitheal which include:

*"To protect and conserve the mountain and forest environment by repairing, maintaining and building mountain and forest trails while, maintaining the challenge for recreational users and striving to preserve a sense of solitude and a 'wilderness' experience".*

Care should be taken not to "overbuild", emphasis should be on keeping the natural look and feel to the route. **Experienced** path builders will be necessary to accomplish this portion of work.

## 2.3 PROJECT TEAM

A thorough field assessment was carried out on September 13, 14 and 15, 2003 by Andrew Norkin, Mike Dales, Gay Needham and Bill Murphy.

**Andrew Norkin** is Trails Manager for the Appalachian Mountain Club<sup>4</sup>, New Hampshire, USA. Andrew currently oversees a program that has over 50 staff and hundreds of volunteers dedicated to managing and maintaining the hiking

---

<sup>3</sup> Trails management handbook, FSH 2309.18, USDA FS Washington D.C. - Recreation Opportunity Spectrum – **See Appendix III**

<sup>4</sup> Appalachian Mountain Club is the oldest outdoor recreation and conservation club in north America. It has over 90,000 members and manages a wide range of outdoor recreation facilities from back country campsites, trails and lands in partnership with the US Forest Service and National Park Service.

## Devil's Ladder Feasibility Study

trails in several states in the North eastern United States including a section of the Appalachian Trail.

**Mike Dales** is the Conservation and Access Officer for the Mountaineering Council of Scotland and has a wide experience in the problems and methods associated with path maintenance and construction.

**Gay Needham** is the Hon. Secretary and a founding member of Mountain Meitheal. Gay has considerable experience as a mountaineer and hill walker.

**Bill Murphy** is the founder and chairman of Mountain Meitheal. He is a keen hill walker and amateur path volunteer with over five years experience and has seen path maintenance and construction in several European countries and North America.

### 2.4 PROJECT FUNDING

This project was undertaken by Mountain Meitheal with financial assistance from the Heritage council.

### 2.5 MOUNTAIN MEITHEAL

Mountain Meitheal is a club of volunteers dedicated to the conservation of the mountain environment through path repair and maintenance work and the promotion of sustainable recreation. Mountain Meitheal is an affiliated club to the Mounatineering Council of Ireland.

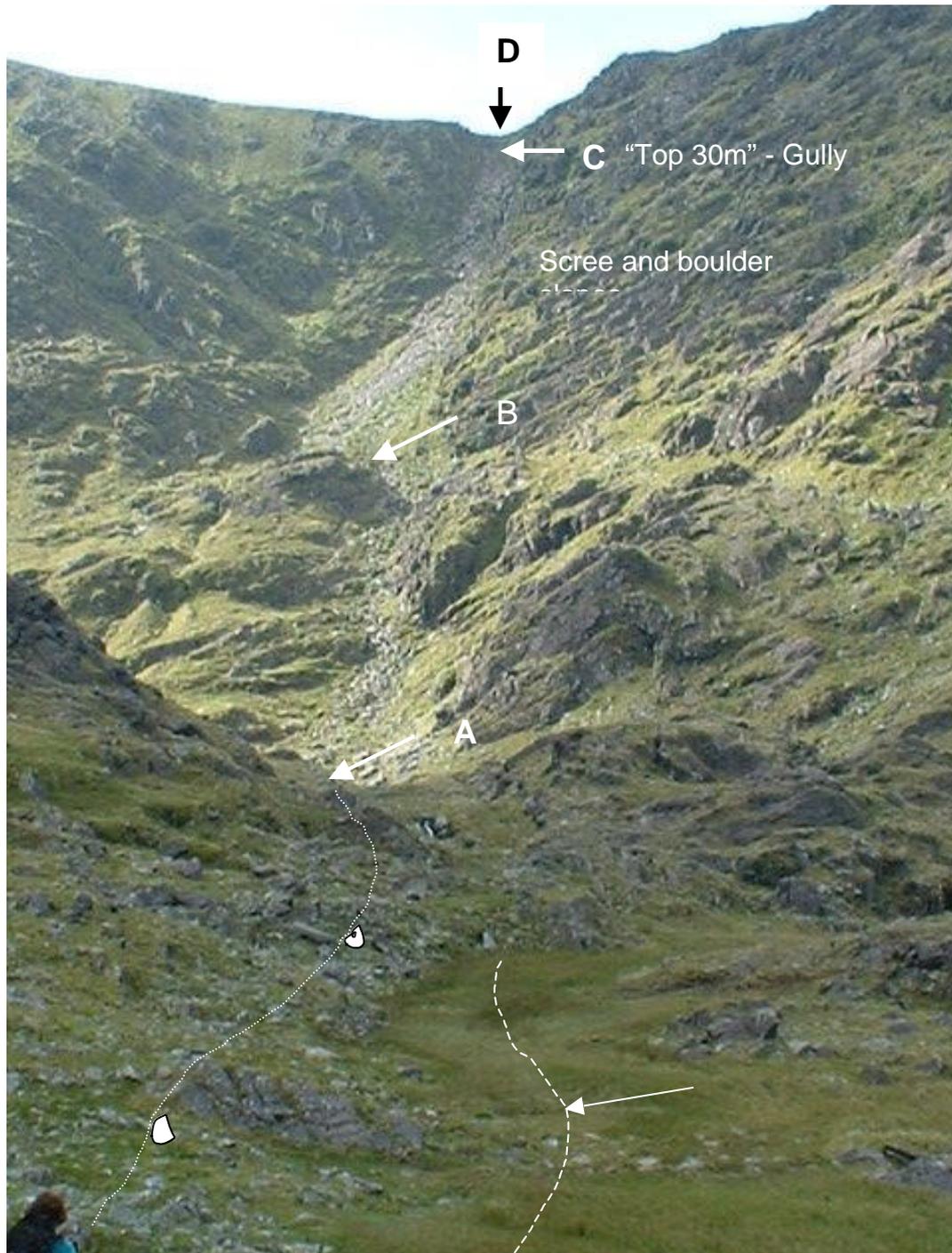
### 2.6 PROJECT WORK AND COST ESTIMATES

As part of the assessment, a proposed route was temporarily flagged starting at the base of Devil's Ladder and ending at the saddle.

Working along this flagged route an assessment of work required was logged. The initial flagged route was moved in places to find the most suitable route for ascending as well as descending. Photos were taken of the route.

Finally, from this log a **cost estimate** was compiled indicating the actual elements that will be required on the proposed route, the time required for both the professional trail crews and volunteers to do the work an an estimate of total costs. The costs were based on the considerable knowledge of Andrew Norkin and using Irish rates per hour.

## Devil's Ladder Feasibility Study



**Figure 1. ABCD shows the Devils Ladder proper. The route marked in the foreground with the arrow should be avoided as it crosses wet soils that have low carrying capacity and therefore low tolerance of erosion. A new route marked to the left on the higher rocky ground would provide a more durable walking surface.**

## 3.1 TECHNICAL REPORT

For the purpose of this of this project the devils ladder is divided into four sections (See figure 1.)

- **Section 1 “The Approach”**
- **Section 2 The Lower section of the Devils Ladder – (See AB figure 1.)**
- **Section 3 Scree and boulder mid section - (See BC figure 1.)**
- **Section 4 The Gully area, top 30m – (See CD figure 1.)**

### Section 1. “The Approach”

The approach to the Devils Ladder is along a well defined but widening path through the Hags Glen which lies between Loughs Callee and Gouragh (See map 2, Appendix II.) The path is marked at the moment by loose cairns – these should be replaced by constructed cairns<sup>5</sup> which are difficult for walkers to add to.

At approximately **grid ref. V 8150 8454** the path begins to climb and a deep gully, approximately 1m deep, has developed at this point.

Once the height is gained the route “gets lost” and walkers tend to follow the route on the right, across wet soils. These have a very low tolerance to erosion. (See figure 1)

**Figure 2. Gully on approach now approximately 1 m deep. Requires remedial action with steps and check dams.**



<sup>5</sup> In Scotland loose cairns have been found to add to erosion and other environmental problems as walkers want to leave their mark by adding stones. The proposed constructed cairns are more difficult to add to and therefore will not result in this problem. **See Appendix IV** and “Complete guide to trail construction and maintenance” – *The Appalachian mountain club*.

## Devil's Ladder Feasibility Study

### Recommendations:

- At the deep gully **grid ref. V 8150 8454** water management is required above the gully – with the construction of water bars and drains to divert water off the path.
- The construction of a series of rock steps and check dams is required to rehabilitate the damage and to avoid further erosion. (see Appendix IV – on rock steps as check dams.)
- The construction of a series of well placed cairns would establish one route on the higher and rocky (more durable) surface see *Figure 3*

The primary area of focus for this project was the section of path known specifically as the Devil's Ladder (see figure 1. ABCD). This section is approximately 700 metres long and ascends a scree and boulder route to the saddle between Corran Tuathail and Cnoc na Toinne (See Figure 1 D).

Presently the path ascending the Devil's Ladder is not defined, requiring users to negotiate their own route. Numerous well trodden paths are noticeable causing an unnecessary amount of resource degradation to occur on the slope and the surrounding vegetation. The state of the lower section of the Devil's Ladder is such that with some action taken soon, the area can be stabilized and **is likely to suffer only minor long-term degradation** and the chance for natural re-vegetation to occur is high. A clinometer reading taken measured an average gradient (A to D) of approximately 32 percent.<sup>6</sup> Gradient can be influenced by “zig zagging” the path which provides a more stable walking route. **See also Appendix V**

---

<sup>6</sup> Recommended gradients for a type IV primitive walking route are between 10 and 12 degrees.

## Section 2 - The Lower section of the Devils Ladder – AB figure 1.

The lower section of the Devils Ladder is a relatively gentle slope on a well vegetated boulder slope. However a number of routes have developed and the path is spreading. The route is relatively robust and is only showing limited erosion impact.

### Recommendations

- Path definition : establish one clearly defined path by route marking. This will limit spread and control overall route damage.
- Water management : where necessary construct waterbars and drains to divert water of the treadway.
- Close existing “bootleg” routes – use rubble to discourage walkers from going off the established route.
- The route should take a zigzag route to achieve suitable gradients. (See figure 3.)



Figure 3 The zig zag route