

Patterdale Parish Community Flood Group

Monitoring Project

November 2017

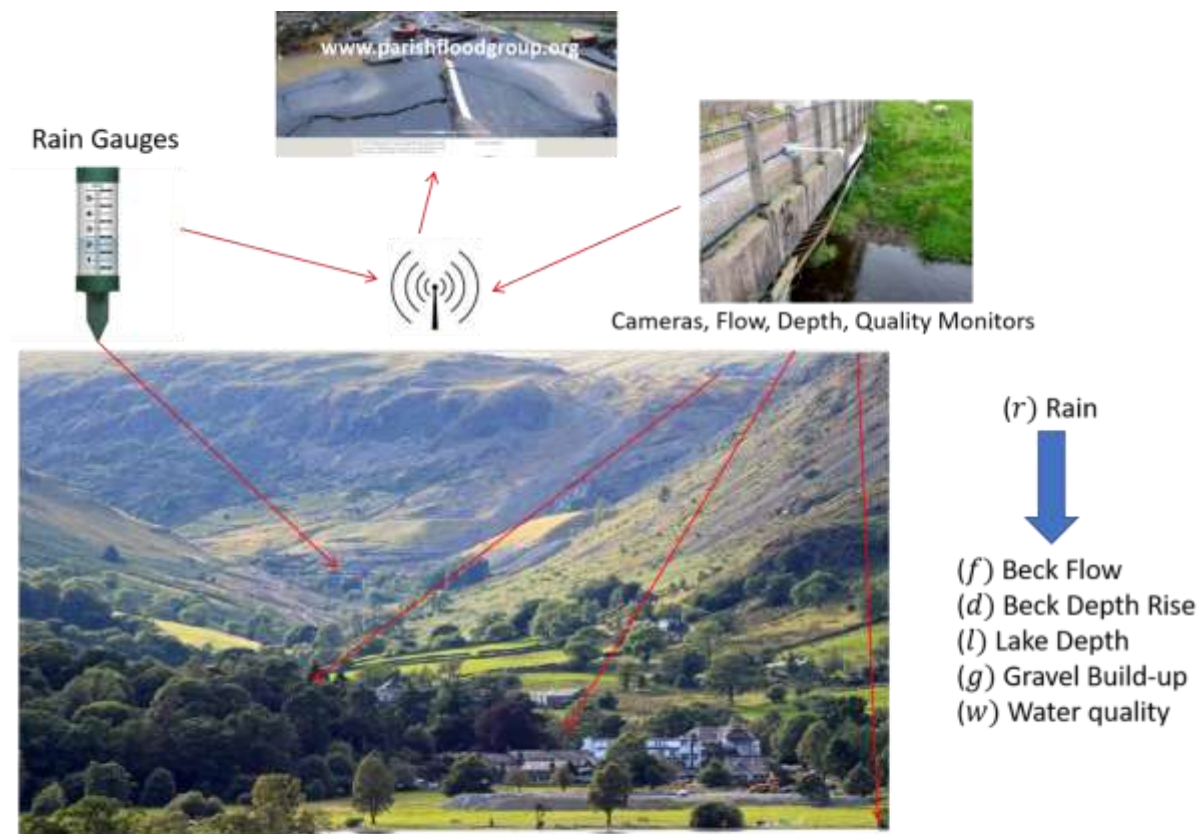


DRAFT

V0.3

Patterdale Parish Community Flood Group Monitoring Project

Executive Summary



The purpose of the monitoring project is to put in place a network of gauges, cameras and monitors across the Parish. There are multiple objectives behind this network including:

- Measuring rain fall at the heads of the valleys
- Measuring flow rates in all the main becks
- Measuring beck depths at key points
- Measuring sediment and gravel build up at key points
- Measuring water quality at key points
- Measuring Ullswater and Brotherswater depths

The aim is that as data is gathered from this network (which will be published on the www.parishfloodgroup.org website) we will be able to start to assess the impact of specified levels of rain on the becks in the Parish, with a view therefore to not only predict more accurately the likely impact of rain, but also over time to measure the effectiveness or otherwise of upstream resilience measures on the rate of flow and rate of depth rise of the becks.

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Planned Monitoring Stations

The proposal is to have the following network in place as soon as possible.

Ref	Area	Location	Type	Landowner	Status
1	Helvellyn	Summit	Rain gauge	LDNP/JMT	Initial discussion held
2	Glenridding	Greenside Mine	Rain gauge	LDNP	Gauge exists but data not networked
3	Glenridding	Gillside upstream	Camera/flow/depth	Gillside Farm	Proposal from Newcastle University – CFG To get permissions
4	Glenridding	Gillside Rattlebeck Bridge	Camera/flow/depth	Gillside Farm	Proposal from Newcastle University - CFG To get permissions
5	Glenridding	TIC/Bridge	Camera/flow/depth/quality	LDNP	Temporary flow/depth monitoring in place by EA
6	Glenridding	Beck Mouth	Camera/flow/depth/quality	Sailing Centre	CFG Proposal - CFG To get permissions
7	Ullswater	Steamer Pier	Camera/flow/depth/quality	Steamers	Depth gauge in place and online
8	Grisedale	Braesteads Farm (or higher)	Rain gauge	Matson Ground Estates	CFG Proposal
9	Grisedale	Braesteads Farm	Camera/flow/depth/quality	Matson Ground Estates	Proposal from Newcastle University
10	Grisedale	Grisedale Bridge (upstream)	Camera/flow/depth/quality	Patterdale Hall Estate	Flow gauge due for installation soon
11	Grisedale	Grisedale Bridge (downstream)	Camera/flow/depth/quality	Matson Ground Estates	Camera and depth gauge in place
12	Patterdale	Goldrill Bridge	Camera/flow/depth/quality	TBC	CFG Proposal
13	Patterdale	Menneting Bridge (Beckstones)	Camera/flow/depth/quality	National Trust	CFG Proposal – NT to agree and provide funding
14	Patterdale	Place Fell	Rain gauge	Dalemain	CFG Proposal

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Ref	Area	Location	Type	Landowner	Status
15	Hartsop	Hydro Station	Rain gauge	National Trust	CFG Proposal – NT to agree and provide funding
16	Hartsop	Horsemans Bridge	Camera/flow/depth/quality	Howe Green Farm	CFG Proposal – NT to agree and provide funding
17	Hartsop	Cow Bridge	Camera/flow/depth/quality	LDNP/NT	CFG Proposal – NT to agree and provide funding
18	Hartsop	Kirkstone Top (car park?)	Rain gauge	Kirkstone Inn/LDNP	CFG Proposal
19	Hartsop	Hartsop Hall Bridge	Camera/flow/depth/quality	National Trust	CFG Proposal – NT to agree and provide funding
20	Brotherswater	Brotherswater	Rain Gauge/ Camera/flow/depth/quality	National Trust	EA rain gauge in place

Budget

The rough budget for the project can be broken down as follows:

Item	Number	Unit Cost	Total
Rain Gauges	3	1000	£3,000
Camera/Flow/Depth	14	2760	£38,640
Network/telemetry	20	500	£10,000
Contingency			£5,464
Sub-Total			£57,104

Existing Funding

Newcastle University	£11,040
Community Flood Group	£10,000
Sub-Total	£21,040

Shortfall

(£36,064)

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As above we therefore have a shortfall of in the region of £36k. Possible sources for this funding include:

- Environment Agency
- National Trust
- John Muir Trust
- LDNP
- United Utilities (water quality)
- Cumbria University

In addition we need to budget for ongoing support and maintenance of the network – budget TBC.

Next Steps

1. Agree “version 1” of this document with initial distribution list – End Sept
2. Publish to wider group with a view to securing necessary funding – Mid Nov

Initial Distribution

Who	Organisation
Matt Perks	Newcastle University
Keira Armstrong	EA
John Malley	NT
Peter Barron	JMT
Fra Cooke	CFG
John Pring	NT
Suzy Hankin	LDNP
Martin Lord	LDNP

Flow Monitors Cost Breakdown

- Micro-controllers and shields (£200);
- NIR cameras and light source (£500);
- Long-range transceivers (£220);
- 12v Batteries (£300);
- Data transmission costs (£300/year);
- Solar panels and controllers (£450);
- 1 x Vented pressure transducer (£350);
- 2 x Ultrasonic level sensors and housing (£240);
- Mounts, cables and peripherals (£200).