

Forgotten Landscapes Project Landscape Conservation Action Plan

5.2 Implementation Programme A Conservation and Climate Change

	Projects	Delivery Plan Codes
1	Geology Rules GEO Cwm Nant Melyn (Hafod Arch) Llanelly Quarry Lime Kiln	GEO 1 GEO 2
2	Testimony to Human Endeavour ARC Dyne Steel's Incline Engine Brake Wheel Hill's Pit Cottages Keeper's Pond Pwll Du Tunnel South Portal	ARC 1 ARC 2 ARC 3 ARC 4 ARC 5
3	Guardians of the Landscape BIO Conserving the Commons Man and the Environment Spoil to Spectacular	BIO1 BIO2 STS 1
4	The Power of Water HP Hydro Power Project	HP1
5	Monitoring MON Monitoring	MON 1

The relationship between the Conservation and Climate Change Projects and relevant Projects in the FLP Landscape Strategy (2009 revised version) can be seen in Table 2 Section 4

5.2.1 Scope of the Implementation Programme

This Programme contains the elements of work that will conserve the principal heritage features of the landscape as identified through the Stage 1 consultation process. These are:

- sustainable commons management
- conservation and presentation of archaeological features
- wildlife conservation (species and habitats)
- conservation of geological features
- climate change initiatives

This approach to landscape scale heritage conservation will not only conserve important heritage features, it will also make them accessible for a wide range of associated purposes. While there may be justification in conserving features for their own sake, it is only through

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increased awareness and understanding that the area's rich heritage will become relevant to a wide ranging audience. This landscape offers spectacular views, industrial structures amidst a transformed landscape, important habitats and species, geological exposures and vast areas of common land. The underlying geology, accompanied by man's activity has created this landscape and it is only through an understanding of this rich heritage that future custodianship can be assured. The other FLP Programmes address this vitally important relationship and will ensure that more people become aware of the landscape's heritage value through improved access, study, interpretation, events programmes and the use of a wide range of media.

5.2.2 Sustainable Commons Management

This is vital if commoners are to be encouraged to continue to exercise their common rights and the heather moorland once more functions effectively as a habitat for rare and endangered species such as the red grouse. Actions required to achieve this are:

- i. control of bracken
- ii. restoration of heathland and grazing areas
- iii. specialist management of sensitive areas
- iv. creation of ecological corridors
- v. creation of fire breaks and development of burning plans

To ensure the commons can be used commercially it will be necessary to

- vi. repair commons boundaries to retain stock
- vii. replace broken / lost highway warning signs to reduce injury or death
- viii. control stocking rates to avoid under or overgrazing

Opportunities to generate new income will also be explored, these include:

- i. bracken composting
- ii. honey production
- iii. livestock leasing scheme
- iv. selling livestock into niche markets

5.2.3 Conservation and presentation of archaeological features

The landscape is rich in industrial archaeology and for this reason a significant proportion of the Scheme area has been inscribed as a World Heritage Site. However, much of this industrial heritage is scattered over a wide area. The obvious limitations in creating access to isolated sites has encouraged the Partnership to identify a number of important features in relatively close proximity to one another. All of these features are associated with the extraction and movement of raw materials or finished goods through the landscape and can be accessed from existing routes. The existing Iron Mountain Trail will act as the spinal route linking these sites and visitors will be able to access them from primary and secondary gateways (see Programme C Visitor Management and Interpretation for further information).

5.2.4 Bio and Geodiversity Conservation

The Forgotten Landscapes Scheme area is renowned for its biodiversity assets ranging from beech woodland in the Clydach Gorge to heather moorland on the Coity and Bloreng mountains. It also contains a rich resource of geological features resulting primarily from mineral extraction for the iron and coal industry. These include quarries, adits and open cast sites where geological formations can be witnessed and interpreted.

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The post industrial landscape is also important as it has allowed the development of a rich mosaic of habitats due to the deposition of extracted mineral waste. This has changed soil chemistry and land form so allowing the establishment of unusual plant communities. While, rock faces, created by quarrying, provide nesting sites for rare birds such as the peregrine falcon and conditions suitable for rare plants such as Leys whitebeam.

The largest area of important habitat is the heather moorland. Managed by the iron masters as grouse shooting moors, they now holds a relict population of red grouse. This species holds iconic status amongst the local community but is perilously close to extinction.

The Partnership will concentrate resources on heather moorland management and red grouse conservation, reedbed creation, the conservation of geological features and colliery spoil – for its geological and archaeological importance. The approach is based upon landscape scale management principles which recognise that an improvement in the general status of important habitats will benefit the associated species. However, special regard will be paid to red grouse populations due to their importance in a local context.

Habitats and geological exposures, where accessible and not too sensitive, can be interpreted and visited for personal interest or for study. Projects to allow this are dealt with in Programme B Community Engagement, Education and Training and Programme C Visitor Communication and Interpretation

5.2.5 Climate Change

The Partnership recognises the threat to the heritage landscape and its features posed by a predicted increase in extreme weather events. High levels of precipitation, drought, frost action, winds, extreme temperatures, will all take their toll on archaeology, geological exposures, habitats and species. Less favourable weather will also make this upland landscape less attractive as a visitor, volunteer and study destination. To help address these issues, the Partnership will install a micro hydro power plant to generate electricity for sale into the national grid. Proceeds will help fund ongoing heritage work and the system will be promoted to local businesses and the farming community.

Conservation activity will also provide the opportunity for developing the skills required to conserve these features in the long term. The establishment of a well trained and motivated volunteer workforce will ensure that conservation targets are achieved.

Outreach, education, training, community enterprise, access and interpretation will be addressed through Programmes B and C

Implementation Programme A Conservation and Climate Change

Project title	Delivery Plan Code	Project description	Audience	Benefits for people	Expected outputs
Geology Rules	GEO				
Cwm Nant Melyn	GEO 1	Improved access to, and presentation of, an important geological exposure, using specialist contractors and volunteers	Heritage visitors Local users Educational groups Volunteers	Improved access and interpretation Heritage conservation training opportunity	<ul style="list-style-type: none"> • Geological exposure presented and understood • New access including 20 steps and footpath pitching • Increased number of visitors • Volunteers with specialist skills
Llanelly Quarry Lime Kilns	GEO 2	To add value to the geological exposure by presenting the associated lime kilns, using specialist contractors and volunteers	Heritage visitors Local users Educational groups Volunteers	Improved understanding Heritage conservation training opportunity	<ul style="list-style-type: none"> • Lime kilns presented and understood • Vegetation removed • Increased number of visitors • Volunteers with specialist skills
Testimony to Human Endeavour	ARC				
Conservation of Dyne Steel's Incline	ARC 1	Using specialist contractors, improve access on Iron Mountain Trail and deal with drainage issues affecting historic incline plane (SAM)	Heritage visitors Local users Educational groups Local history / archaeology societies	Improved access and SAM in better state of repair	<ul style="list-style-type: none"> • 150m of Iron Mountain Trail improved. • Increased use of Iron Mountain Trail • SAM conserved
Engine brake wheel	ARC 2	Conservation of important primitive steam powered winding gear (SAM), using specialist contractors and volunteers	Heritage visitors Educational groups Volunteers Local history / archaeology societies	Heritage conservation training opportunity Improved conservation, presentation and understanding of feature	<ul style="list-style-type: none"> • Feature conserved (long term) • Increased level of interest amongst heritage visitors • Better understanding of the role the feature played in industrial transportation • Volunteers with specialist skills
Hill's Pit cottages	ARC 3	Presentation and consolidation of foundations and walls of former workers cottages, using specialist contractors and volunteers	Heritage visitors Educational groups Volunteers Local history / archaeology societies	Heritage conservation training opportunity Improved conservation, presentation and understanding of feature by visitors	<ul style="list-style-type: none"> • Garden walls and building foundations presented and consolidated. • Increased level of interest amongst heritage visitors • Better understanding of the role the feature played in industrial transportation • Volunteers with specialist skills •

Project title	Delivery Plan Code	Project description	Audience	Benefits for people	Expected outputs
Keeper's Pond	ARC 4	Conservation of stone dam wall and installation of grill over unsafe culvert using specialist contractors and volunteers	Heritage visitors Educational groups Volunteers Local history / archaeology societies General tourists	Heritage conservation training opportunity Improved conservation, presentation and understanding of feature	<ul style="list-style-type: none"> • 50m length of dam wall restored to safe condition and culvert opening protected by grill • Long term viability of historic water body • Volunteers with specialist skills
Pwll Ddu tunnel	ARC 5	Excavation, presentation and interpretation of former tramroad tunnel portal and creation of access, using specialist contractors	Heritage visitors Educational groups Volunteers Local history / archaeology societies	Improved conservation, presentation and understanding of feature and its role in early industrial transportation	<ul style="list-style-type: none"> • Portal conserved • Site landscaped • Access created • On site interpretation installed • Increased number of visitors
Guardians of the Landscape	BIO				
Conserving the Commons	BIO 1				
Bracken Management	BIO 1a	This Project will manage bracken in key areas and assist in the conservation of heather moorland. Work conducted by specialist contractors and local commoners	Local commoners CCW Heritage visitors Educational groups Volunteers General tourists Grouse shooting syndicate	Landscape management training opportunity Income from contract work and improved grazing opportunities for commoners Improved access for all Greater awareness of local traditions for local people and visitors	<ul style="list-style-type: none"> • Area of bracken reduced by 450 – 650ha by 2013 • 5 commoners with accreditation in bracken management • Stock returned to previously inaccessible areas
Bracken composting	BIO 1b	Led by the FLP Commons Officer, this Project will Investigate the possibility / viability of establishing a community enterprise to be adopted by the Commons Management Group	Heritage visitors Educational groups Volunteers General tourists Grouse shooting syndicate Local people	Income source for commoners improved grazing opportunities for commoners Improved access for all	<ul style="list-style-type: none"> • 1 Community Enterprise established by 2013 • Bracken compost available through local outlets • Stock returned to previously inaccessible areas
Heather Moorland Management	BIO 1c	Fire breaks cut and dedicated management plan prepared for heather management	Commoners CCW SW Fire and Rescue Service	improved grazing opportunities for commoners	<ul style="list-style-type: none"> • Fire breaks created • Reduced frequency of fires • Heather management and burning plan prepared

Project title	Delivery Plan Code	Project description	Audience	Benefits for people	Expected outputs
			Heritage visitors Educational groups Volunteers General tourists Grouse shooting syndicate	Greater awareness of local traditions for local people and visitors Training for commoners in heather management	<ul style="list-style-type: none"> • 10 commoners received training • Red grouse breeding success improving
Boundary Repair and Restoration	BIO 1d	Make the commons boundaries stock proof through a combination of dry stone wall restoration and the use of post and wire fencing. Using specialist contractors, commoners and volunteers under BTCV supervision	Commoners Land owners Heritage visitors Educational groups Volunteers General tourists Grouse shooting syndicate	Commons more suitable for increased stock levels Additional income source for commoners Urban communities less exposed to wandering stock Greater awareness of local traditions for local people and visitors	<ul style="list-style-type: none"> • Make 10km of commons boundary stock proof • 20 volunteers and 5 commoners received training • More grazing animals on commons
Stocking Rates	BIO 1e	This Project will provide commoners with cattle to be kept on the common in areas where bracken management requires follow up grazing. PONT will play a key role	Commoners PONT CCW Heritage visitors Educational groups Grouse shooting syndicate	Income source for commoners Greater awareness of local traditions for local people and visitors	<ul style="list-style-type: none"> • 2 new herds by 2013 • 100 cattle on commons by 2013 • 100 ponies on common by 2013 • Bracken regrowth suppressed • Heathland mosaic improving • Livestock sold into niche markets
Man and the Environment	BIO 2				
Reedbed creation	BIO 2	To create 2ha of reedbed with associated scrapes, ponds and ditches. Using specialist contractors and volunteers led by BTCV, supported by EA	Environment Agency Heritage visitors Educational groups Volunteers General tourists Existing users of Garn Lakes Local Nature Reserve	Creation of habitat uncommon in the area - new visitor experience Educational and awareness raising opportunity for learners of all ages Training for volunteers	<ul style="list-style-type: none"> • 2ha reedbed • 500m ditches • Clearance and widening of existing ditch • 10 volunteers received training
Spoil to Spectacular	STS				
Coity Tip	STS 1	This Project will add value, to existing facilities through a number of improvements to	Visitors to Big Pit and to the heritage landscape	Improved facilities at a popular site	<ul style="list-style-type: none"> • Stabilised slopes • Off road bike damage repaired • Pond dipping platform

Project title	Delivery Plan Code	Project description	Audience	Benefits for people	Expected outputs
		access, interpretation, educational opportunities and biodiversity management. Issues regarding site stability and maintenance will also be addressed. Undertaken by specialist contractors and volunteers led by BTCV	Educational parties Community study groups Volunteers DE&T (WAG) CCW	Improved interpretation and awareness raising Greater awareness of local heritage for local people	<ul style="list-style-type: none"> • Least restrictive access provision • 8 waymarking signs • 1 gate • 4 benches • More visitors
The Power of Water	HP				
Dragon's teeth Micro Hydro project	HP 1	A micro hydro electricity generator will be installed by specialist contractors on the Afon Lwywd in Blaenavon. Electricity sales will be used to fund volunteer heritage conservation programmes. The site will be used for awareness raising and educational purposes	Local business and farming community Educational groups Local community	Educational and awareness raising opportunity for people of all ages Demonstration site to encourage others to follow suite Resources for volunteer work force	<ul style="list-style-type: none"> • £25,500 pa income • 150,000 kWh pa • Performs as awareness raising demonstration site • Provide resources for long term volunteer activity
Monitoring	MON				
Monitoring	MON 1	Through regular monitoring, Project management can be honed to deliver the desired outputs. Work will be conducted by specialists and volunteers led by BTCV and Partnership experts	Project managers Volunteers Universities and Colleges Amateur specialist groups and societies	Well managed Projects will result in better managed heritage landscape which will enhance the experience for visitors, local people and educational groups	<ul style="list-style-type: none"> • All conservation Projects monitored • Reports produced • Management modified if / where necessary

Budget Summary for Implementation Programme A Conservation and Climate Change

Plan	Activity	Year 1		Year 2		Year 3		Total		Total cash & DINK
		Cash	DINK	Cash	DINK	Cash	DINK	Cash	DINK	
GEO 1	Cwm Nant Melyn	0	1,700	9,350	0	0	0	9,350	1,700	11,050
	Liaison with BGCBC - site visit		350					0	350	
	Liaison with other stakeholders		350					0	350	
	RIGS survey		1,000					0	1,000	
	Survey and report on site biodiversity			500				500	0	
	3 days roped access work			1,350				1,350	0	
	Clean off section of cyclothem exposure			1,000				1,000	0	
	Create a series of steps			1,000				1,000	0	
	Repairs/improvements to pedestrian access using crushed stone			1,000				1,000	0	
	Cost of crushed stone			500				500	0	
	Interpretive leaflet and on site panel design and production costs			4,000				4,000	0	
	Monitoring and maintenance by volunteers (2 day skilled vol time) - incl in VOL 1							0	0	
	Monitoring late May, skilled vol £150 incl. VOL 1									
	Maintenance late May skilled vol £150 incl. VOL 1									
GEO 2	Llanelly Quarry Lime Kilns	0	0	200	0	640	0	840	0	840
	Biodiversity survey			200				200	0	
	Specialist vegetation cutting - contractors - team of 3 for one day					640		640	0	
	Volunteer time 3 days at £150 - included in VOL 1									
ARC 1	Conservation of Dyne Steel Incline	4,900	0	0	0	0	0	4,900	0	4,900
	Repairs to incline surface	4,000						4,000	0	
	Archaeological watching brief	900						900	0	

Plan	Activity	Year 1		Year 2		Year 3		Total		Total cash & DINK
		Cash	DINK	Cash	DINK	Cash	DINK	Cash	DINK	
ARC 2	Conservation & Presentation of Engine Break Wheel	14,000	0	0	0	0	0	14,000	0	14,000
	Clearance, consolidation, repointing, fencing, ironwork conservation	12,800						12,800	0	
	Archaeological watching brief	1,200						1,200	0	
	Volunteer time required for on-going maintenance of site - included in VOL 1									
ARC 3	Presentation of Hill's Pit Cottages	3,000	0	0	0	0	0	3,000	0	3,000
	Clearance and consolidation	1,800						1,800	0	
	Archaeological watching brief	1,200						1,200	0	
	Volunteer time required for on-going maintenance of site - included in VOL 1									
ARC 4	Keeper's Pond	15,000	0	0	0	0	0	15,000	0	15,000
	Effecting repairs to the dam wall and culvert opening	9,300						9,300	0	
	Making and installing of grille over culvert opening	5,000						5,000	0	
	Archaeological recording	700						700	0	
ARC 5	Pwll Du Tunnel South Portal	53,843	0	0	0	5,000	0	58,843	0	58,843
	Excavation and conservation of feature	18,843						18,843	0	
	Stone masonry	15,000						15,000	0	
	Project management for all ARC projects	20,000						20,000	0	
	Access					5,000		5,000	0	
	Volunteer input into on going site management incl in VOL 1									

Plan	Activity	Year 1		Year 2		Year 3		Total		Total cash & DINK
		Cash	DINK	Cash	DINK	Cash	DINK	Cash	DINK	
BIO 1a	Bracken Management	90,950	0	56,000	0	44,000	0	190,950	0	190,950
	Helicopter contract	50,000		50,000		30,000		130,000	0	
	Bruising contract yr 1 30ha/ yrs 2 & 3 70ha	1,200		3,000		3,000		7,200	0	
	Machinery purchase	34,750						34,750	0	
	Maintenance	5,000						5,000	0	
	Yr 1 follow up management where necessary			3,000				3,000	0	
	Yr 2 follow up management where necessary					5,000		5,000	0	
	Boom and knapsack spray contract					6,000		6,000	0	
BIO 1b	Bracken Composting									0
	Officer time									
BIO 1c	Heather Management	0	7,000	0	7,000	10,000	7,000	10,000	21,000	31,000
	Officer time							0	0	
	SW Fire Service 5 days/year £350/officer		7,000		7,000		7,000	0	21,000	
	Deliver dwarf shrub heath management plan subject to Yr 2 survey findings					10,000		10,000	0	
	5 days/year with 5 young offenders									
BIO 1d	Boundary Repair and Restoration	8,140	1,260	8,140	1,260	4,640	1,260	20,920	3,780	24,700
	Reinstating 4km of drystone wall and repair fencing - trainer and volunteers	8,140	1,260	8,140	1,260	4,640	1,260	20,920	3,780	
	Volunteer monitoring and maintenance (2 vols one day a year) incl. VOL 1									
BIO 1e	Stocking Rates and Livestock Purchase Scheme	0	0	11,540	0	8,080	0	19,620	0	19,620
	Reintroduce traditional breeds of cattle. Establish legally binding agreements with commoners			10,000		5,000		15,000	0	
	Animal welfare yearly costs			1,540		3,080		4,620	0	

Plan	Activity	Year 1		Year 2		Year 3		Total		Total cash & DINK
		Cash	DINK	Cash	DINK	Cash	DINK	Cash	DINK	
BIO 2	Reedbed Creation	2,000	0	12,800	0	24,470	0	39,270	0	39,270
	Great-crested newt survey	1,000						1,000	0	
	Digging of trial holes and interpretation of results	500						500	0	
	Consultant project management	500		2,000		750		3,250	0	
	Hire of 13 tonne excavator with driver (4wks)			4,250				4,250	0	
	Hire of mini-digger plus driver (2 wks)			2,100				2,100	0	
	Hire of 4WD dumper for soil transfer (3wks)			3,200				3,200	0	
	Supervision of construction work (5 days)			1,250				1,250	0	
	Purchase reeds (coir mats and reed plugs)					21,720		21,720	0	
	Planting of reeds (10 man days)					2,000		2,000	0	
	Planting by vols (10 man days)									
STS	Spoil to Spectacular	20,000	350	17,020	0	0	0	37,020	350	37,370
	Pond dipping platform	20,000						20,000	0	
	Baseline data survey TCBC ecologist		350					0	350	
	Site improvements			17,020				17,020	0	
HP	Dragons Teeth Micro Hydro System	162,299	0	0	0	0	0	162,299	0	162,299
	Turbine and belt drive system	38,000						38,000	0	
	Generator, control and grid connection system	16,000						16,000	0	
	Intake	9,500						9,500	0	
	Civil building works Intake - Power house	21,500						21,500	0	
	Penstock pipe	11,300						11,300	0	
	Penstock pipe installation	20,000						20,000	0	
	Grid connection	27,000						27,000	0	
	Turbine generator installation including lifting hire	10,000						10,000	0	
	Project management- Supervision of civil works and pipe installation	4,999						4,999	0	
	Commissioning G59/1 - including utility witness test fees.	4,000						4,000	0	
	Maintenance of water way and electricity readings (2 vols one day a year) - covered in VOL 1									

Plan	Activity	Year 1		Year 2		Year 3		Total		Total cash & DINK
		Cash	DINK	Cash	DINK	Cash	DINK	Cash	DINK	
MON	Monitoring	8,140	2,000	8,140	2,000	4,640	3,150	20,920	7,150	28,070
	Conduct monitoring and further research programme - species and habitats	8,140	2,000	8,140	2,000	4,640	3,150	20,920	7,150	
	Volunteer impact covered in VOL 1									
	Totals	382,272	12,310	123,190	10,260	101,470	11,410	606,932	33,980	640,912