

PEATSCAPES



Adaptation to Climate Change in a UK Protected Area: A Case Study for Peatlands



Objectives:



PEATSCAPES

- **Restoration:** Supporting restoration and management work;
- **Research:** Supporting and disseminating new and existing research;
- Celebration: Raising appreciation and understanding of blanket bog;
- Promoting best practice: Provision of management advice.



- Partnership project
- 2006-2012
- 3 staff
- £2.2 million
- AONB wide remit
- AONBs largest climate change project
- Networking nationally via IUCN UK Peat Programme



Why is Peat Important?

- 1) Biodiversity
- 2) Carbon Store/Sink
- 3) Water Colour
- 4) Sediment Load
- 5) Flooding
- 6) Historical Record
- 7) Economy



Local – National – International Benefits

The Global Situation

How much peat is there? 2.7 million km²





European Peat Resource





North Pennines AONB has 900 km² of peat 5% of UK total

Climate Change Adaptation and Mitigation

- Adaptation initiatives and measures to reduce the vulnerability of natural and human systems against actual or expected climate change effects. ie resilience
- Mitigation taking actions to reduce greenhouse gas emissions and to enhance sinks aimed at reducing the extent of global warming.*

What do peatlands do for Climate Change?

- Store carbon -mitigation
- Sink new carbon mitigation
- Flood control mitigation/adaptation
- Water provision/quality adaptation
- Restoration of peatlands resilience

Managing for Resilience

- Habitat/species responses to climate change are unique
- Management needs to consider uniqueness
- i.e. one size does not fit all
- Prioritise by
- Highly vulnerable habitats
- High profile habitats
- Data-rich species
- Keystone species
- Economics (funding)
- Access
- Other?

s Releases December 2007 - Peat	tlands are Quick and Cost-E	ffective Measure to reduc	e 10% - Microsoft	Internet Explorer	P	_ 🗗 🔀
 Image: http://www.unep.org/Document; 	:s.Multilingual/Default.asp?Documen	tID=523&ArticleID=5723&l=en		🔽 🗲 🗙 Live	Search	P -
<u>V</u> iew F <u>a</u> vorites <u>T</u> ools <u>H</u> elp						
O Press Releases December 2007 - P	Peatlands are Qui			🙆 • 6) 🔹 🖶 🔹 🔂 Page 🔹	
About UNEP UNEP	P Offices News Centre	Multimedia Publicati	ons E-calendar	Awards Em	ployment	^
United UNEP enviror	d Nations Environment	ent Programme t	Searc	ch Google ^m Custom S	Gearch Go!	
News Centre						
Home News Centre Media Contacts Press Releases In Focus Speeches	Printable Version Peatlands are Quick reduce 10% of green International community ca restore peatlands- the wor	Aeasure to ect and store.	A Global Mandate?			
Multimedia RSS / Podcasts Posters E-Cards	Bali, 11 December 2007- C peatlands emits more than - equivalent to 10% of globa Assessment on Peatlands, comprehensive global asse degradation and climate cha	learing, draining and setting 3 billion tonnes of carbon did I emissions from fossil fuels Biodiversity and Climate Cha ssment of the link between p ange.	fire to ixide every year , according to ange, the first peatland			
Search News 💌	"Just like a global phase ou switch to hybrid cars, protec another key "Iow hanging fru options for climate change r Secretary General and Exec (UNEP).					
	Peatlands are wetland ecos under saturated conditions storing on average 10 times ecosystems. Peatlands occ hectares or 3% of the world	systems that accumulate plan to form layers of peat soil up more carbon per hectare th ur in 180 countries and cove s surface.	nt material to 20m thick - an other r 400 million	La Car		
	Steiner said, "the new Asse Facility (GEF), shows that pe	ssment, funded by the Globa atlands are a critical part of	I Environment Ran the global Glob	nsar Convention on Dal Environment Cer	Wetlands htre (GEC)	~

How much carbon is in North Pennines peat?

Peat (ha)	T/ha	Carbon tonnes	CO ² tonnes		
90,000*	2,000	180,000,000	658,800,000		
1,926,000**	2,000	3,852,000,000	14,098,320,000		

UK 2006 CO² emissions 560,000,000 (DEFRA) *AONB Peat = 1.2 years of UK equivalent CO² **UK Peat = 25.2 years of UK equivalent CO²

Threats & Conflicts Drainage

- Drains cut for agriculture and shooting reasons. (9,400 km in AONB)
- Left a legacy or degraded biodiversity, eroding peat, carbon release, increased water colouration and sediment loading.
- Paradigm and cultural conflicts exist, i.e. what is peatland for?
- Peat (moorlands) are there to be shot
- Cultural view that moorlands have always been and always will be treeless and ecologically static
- Should peatlands being managed for climate change reasons? (carbon farmers)

Burning - Shooting

- Burning is undertaken for shooting reasons
- Provides a mosaic of vegetation ages for birds
- Concerns about hot burns are frequent burns exist
- Is there damage to moss layer and peat?
- Science in emerging
- How will climate change effect burning.
- Paradigm and cultural conflicts exist, i.e. what is peatland for?
- Peat (moorlands) are there to be shoot
- Cultural view that moorlands have always been and always will be treeless ecologically static

Grazing - Agriculture

- Many areas are overgrazed
- Impacts on peatland stability
- Impacts of vegetation
- Impacts of restoration and ability to recover
- Hill farming is on the decline, is it sustainable?

Wind farms – Economy?

Peatlands tend to be windy and high places Pressure to build on peat Need to balance one carbon system for another? What is the role of protected areas and wind farms

Climate Change?

Peatlands will be affected by climate change and can effect climate change Can we restore degraded peatlands to mitigate their carbon loss to avoid pristine peatlands being impacted by climate change causing their carbon release and causing runaway climate change?

Peat scores high on the priority list due to multiple benefits and high concentrations of carbon

Temperature Trends from 1931

(Locally weighted regression lines)

9,420 km of grips (60,000) (Drains) cut since 1950's

900 km² peat in AONB

Grip Blocking

Landscape Scale Problem – Simple, proven, long term, natural solution.

Peat Power?

Strengths

Peatlands deliver a wide range of ecosystem services Peatlands are a huge carbon store with direct climate change benefits Peatland restoration can convert bogs from a carbon source to a sink Peatlands offer climate change adaptation solutions Peatland restoration is relatively cheap, natural and permanent The UK has many successful peatland restoration projects There is professional momentum for peatland restoration

Peat Power?

Weaknesses

- Insufficient policy relevant scientific information
- No coordinated policy focus on peatlands
- The extent of damaged UK peatlands

Impact of greenhouse gas budgets versus a focus on carbon dioxide Potential conflicts between objectives from different ecosystem services Limited consideration of whole functioning units beyond designated sites Lack of public awareness and understanding

Poor communications and campaigning

Scale and Linkages

- The Butterfly Effect?
- Can a sheep farmer in North Pennines can impact glacier melt in the Arctic
- 900 km² of peat in AONB to 2.7 million km² of peat around the globe (the carbon connection)
- Linkages
- UK Peatland Network
- IUCN UK Peatland Programme
- UK Climate Change Act
- CAP Reform 2013
- EU Budget Reform 2013
- Copenhagen Summit Dec 2009

Climate Change Battle is being fought in the wild areas of the world Adaptation maybe habitat specific but thinking needs to be global

The Global protected areas family can speak with one voice and act in a coordinated fashion to mitigate and adapt to climate change.

PEATSCAPES

PEATSCAPES

Adaptation to Climate Change in a UK Protected Area: A Case Study for Peatlands

www.northpenninesaonb.org.uk