

Qualitative approach to adaptation assessment

- **Straightforward to use**
- **Undertaken with minimal specialist climate change knowledge**
- **Widely applicable**
- **Build confidence, knowledge about climate change**
- **Start / develop planning and action**
- **Consistent outputs**

Adaptation: Scoping and embedding

- **Framework for learning and discussion towards identifying key impacts and adaptation responses**
- **Does not produce a completed ‘shelf’ product**
- **Starts to embed climate adaptation as an ongoing component of conservation delivery**
- **Discussion and partnership building**

A simple framework

- **Eight step adaptation assessment process**
- **Stakeholder workshop**
- **Four guiding / reporting tables**
- **Summary report structure**



2°C and 4°C worlds as baselines

- **Frames future climate in plain language**
- **Release from projected emissions scenarios, links to real world change**
- **Links to the climate mitigation world**
- **2°C - practical planning**
- **4°C - long term outlook, mitigation messages**

Vulnerability or risk?

- **Risk – likelihood / worst-case of potential situations**
- **Climate change makes nature *vulnerable***
 - Gradual, cumulative impacts as well as thresholds
 - Weather events, extremes
 - Indirect impacts – from other responses
- **Nature requires favourable conditions each year**
 - needs ongoing, as well as step-change, responses
- **Vulnerability**
 - Impact = exposure x sensitivity
 - Vulnerability = potential impact x adaptation
- **Adaptation reduces vulnerability**

Eight steps to adaptation

1. List objectives of work area
2. Find out how climate is expected to change
3. Assess affect on objectives
 1. Direct impacts
 2. Indirect impacts
4. Prioritise threats and opportunities
5. Explore range of strategies and actions
6. Agree actions and revise work programmes
7. Monitor, review adaptive management cycle
8. Communications to key audiences

Tables frame the discussions and collate the information

- **Four tables linked to the eight steps process**
 - **Climate change**
 - **Direct impacts**
 - **Indirect impacts**
 - **Adaptation responses**
- **Logic framework for discussion / assessment**
- **Standardise and ensure gathering of information from the workshop**
- **Summary report format**

Table 1 Projected climate change

Scenario	Temperature °C rise				Rainfall % decrease			
	B2		A2		B2		A2	
	Anguilla	Cayman	Anguilla	Cayman	Anguilla	Cayman	Anguilla	Cayman
DJF	2°C	2-3°C	2°C	3°C	-25%	-50%	-50%	-50%
MAM	3°C	2°C	3°C	3°C	-50%	-25%	-50%	-25%
JJA	2°C	3 °C	2°C	3-4°C	-50%	-50%	>-50%	>-50%
SON	2°C	3°C	2°C	3°C	-50%	-50%	-50%	>-50%
Annual	2°C	2-3°C	2°C	3°C	-25%	-25%	-50%	-50%

Table 2 Direct impacts

Work objective	Key climate change impacts	Consequences of changing climatic conditions	Impact on objectives: Threats and opportunities	Level of impact	Timescale of impact
Breeding waders on lowland wet grassland	Hotter drier summers	Lowered summer water table	Hard dry ground for breeding waders June-July	Med	5-10 years
		Fire risk increases	Destruction of habitat	High	From 2015
		Early / longer growing	Sward too dense for breeding	Med	Now

Table 3 – Indirect impacts

Climate change issue	Objective of adaptation	Likely activities to achieve objective	Threats / opportunity to our objective / interest	Level of impact	Time of impact
Rising atmospheric CO2 concentration	Increase yield	Crop breeding including GM	Increased GM crop issues	Low	5-15 years
		Field management changes	Changing management changes conditions for farmland birds eg early, denser sward, changes in inputs	Medium	10-20 years
		New crops	Depends on crops: threats and opportunities	Medium	Now/ongoing

Table 4 – Adaptation responses

Impact, threat or opportunity	Objective of adaptation	Strategy to achieve objective	Key actions	Priority	Timescale to achieve adaptation
Drier summers causing issues for summer breeding waders	Maintain breeding populations in Futurescape	Reduce abstraction pressure in catchment	Target farm irrigation demand / more suitable crops	Med	Changes needed by 2020
		Store more winter water on RSPB reserves	ID reserves, research potential landholdings, volumes, costs	High	Include in reserves management plan reviews- ongoing
		Increase wetland areas in floodplains	Work with water management bodies to increase natural flood control, ecosystem based adaptation	High	2020

Summary reporting framework

- *Summarises the adaptation assessment in a concise and consistent format, using plain language to highlight the main climate change adaptation points and actions.*
- *Together, these short (2 to 4 sides of A4) summaries will form an adaptation 'library' and provide the basis for the RSPB's adaptation report.*
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- **One sentence summary**
- The key message about climate change and adaptation for the Futurescape
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- **The main changes in climate for a 2°C world are...**
- Briefly describe the main changes in climate / weather conditions expected from the local climate change projections for a 2°C rise in average global temperature
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- **The main changes this is likely to bring to our current interests are...**
- There may be benefits as well as problems and adverse effects, and these may arise from both direct (eg climate) and indirect (eg land management / use change) impacts and changes.
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- **If we had to cope with a 4°C world, this would bring...**
- Briefly describe the climate change and key changes this would bring. Although far off and with much greater uncertainty, a short vision of this possible future may be helpful both to guiding long term conservation action, and to inform mitigation action.
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- **Current activities that contribute to meeting climate change are...**
- There may be several current conservation activities that help build resilience, or help accommodate nature to the changes that climate change is bringing
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- **The main new things that we need to consider and/or do are...**
- What needs to be done differently?
And when is action needed to implement them?

Adaptation with landscape delivery partners



- Initiating climate change discussion
- Key impacts and responses
- Multi-sectoral approach
- Partnership building

Results: Wiltshire chalk country

Key impacts

- Threatened with uncertainty
- Higher rainfall will change species composition, more grasses
- Fewer invertebrates in chalk rivers
- Desilting and gravel bed regeneration
- Increase in agricultural irrigation and pesticides
- More opportunities for stone-curlews, new species arrivals

Actions with partners

- Develop vision and research to promote best outcomes
- Encourage more chalk scrapes and butterfly banks among partners
- Strengthen links with Wessex Water, Defence Ministry
- Develop arable plant mapping

Actions for RSPB

- Develop a grassland carbon code in 5 years
- Encourage land owners to revert to chalk grassland
- Educate/train advisers
- Monitor of chalk grassland indicator species
- Monitor of new taxa - fungi, lower plants
- Maximise amount of chalk grassland on our reserves (at high standards) to demonstrate good practice
- More flexibility, adaptation in reserves
- Be innovative and opportunistic for potential species colonisations or translocation
- Be more alert and quickly reactive to agricultural policy changes and opportunities
- Promote tree planting in valleys to contribute to water cleanliness, whilst avoiding stone-curlew/lapwing areas



Conservation management of Purbeck's heathlands in the face of climate change



Dartford warbler, UK is likely to become more globally important for this species under climate change scenarios. Ben Hall (rspb-images.com).

A RICH HABITAT

Lowland Heathland is an extremely valuable and rare habitat, making the Dorset heathlands one of UK's most important wildlife areas – with much of it designated as Special Protection Areas or Special Areas of Conservation under European law. The total Heathland extent in Purbeck is around 3,607ha (7.84% of the NIA) of which around 1,365ha is wet Heathland. Within the Heathland complex there are important concentrations of other priority habitats including mires and fens, acid grassland, wood pasture and wet woodland. Valley mires are particularly well represented (around

325ha) and together with the New forest support the vast majority of remaining European habitat. Over the last 250 years 85% has been converted to agriculture, forestry or urban development but intensive conservation investment in the past 30 years has improved the status and quality of that which remains. A range of pressures continue to constrain the survival and future management of lowland Heathland areas including climate change and the impacts of this and other factors may not be readily separable.

LOWLAND HEATHLANDS – FIVE TOP 'NO REGRETS' ACTIONS

#1

Ensure that responding to climate change is well integrated into site management plans with the emphasis on monitoring change and flexible response

#2

Bigger sites are more robust – seek to attain larger sites, in the best possible condition and restored and linked up wherever possible

#3

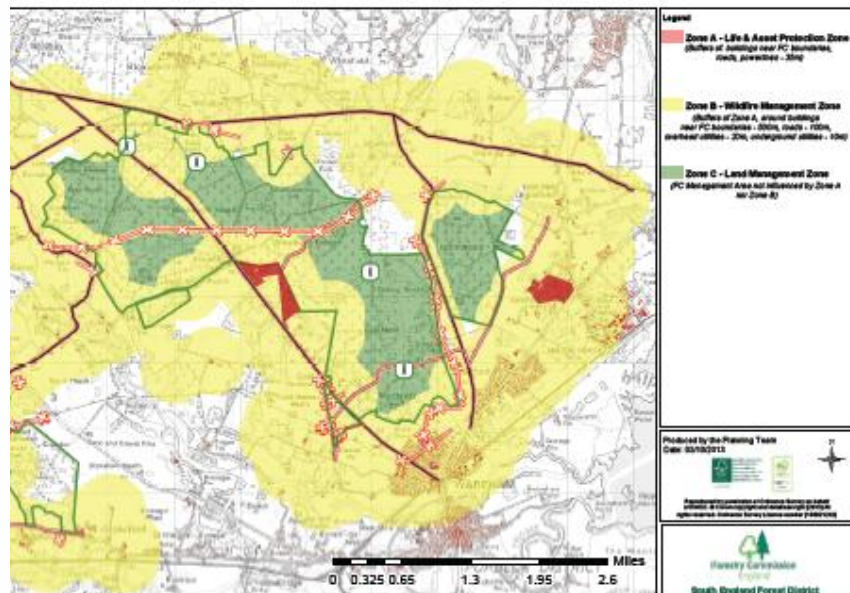
Wet heaths are most vulnerable to changes in water availability – focus on reducing water loss and having the ability to respond to drought events

#4

Ensure good up to date fire management plans are in place which take a landscape scale approach

#5

Build public support for any changes that you need to make and engage people in monitoring the impact of and response to climate change



Fire management map from Wareham Forest. Forestry Commission.

Fire Management Zone

LDY

risk of wildfire caused by drought as well as increased temperatures presents a threat to the NIA areas with fire susceptible heather, gorse and young trees. The Forestry Commission is undertaking risk assessments for heathlands and defined management Zones along with a range of management techniques,

including focusing on tree species selection and adaptive management. The lessons learnt from areas like Wareham Forest were then shared with the NIA partners, via the Wildfire Working Group, so that wildfire resilience could be established at the landscape level. Our work in Wild Purbeck, has led to the development of national guidance.



Heathlands are the most important UK habitat for reptiles, such as the rare smooth snake. Fred Holmes.



Protected areas in Anguilla and Cayman Islands



Further information

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