

New Forest National Park Climate Change Risks and Opportunities Assessment

Report Summary, November 2025

This document summarises the results of a climate change risks and opportunities assessment for the New Forest National Park. The project was commissioned by the New Forest National Park Authority and forms a contribution to the YouCAN project, funded by the National Lottery Community Fund.

The aim is to improve understanding of the potential impacts of climate change locally, with a focus on the natural environment and the special qualities that distinguish the New Forest from other parts of lowland England.

The intention is that this baseline assessment will help to empower landowners, land managers, residents, and visitors to make choices and take action to mitigate the risks of climate change. The report shows that much can be done, at all scales, to increase the resilience of this unique landscape, its exceptional biodiversity, and cultural heritage for the long term.

The study has been undertaken by local scientific and geospatial experts, with input and guidance from a range of individuals and organisations, whose support has been greatly appreciated.



Context

Climate change is increasingly viewed as the greatest long-term threat to biodiversity and the natural environment, both globally and locally in the New Forest. At a local level, Met Office projections suggest a continuation of trends observed over the last two decades, with hotter drier summers, milder wetter winters, rising sea levels, and more frequent episodes of extreme weather leading to increased risks of drought, flooding, and wildfire.

In the last four years alone, the New Forest has experienced record summer temperatures (2022), the wettest winter on record (2023/24), and one of the driest and hottest spring/summer periods on record (2025). These changes are impacting the management and use of the National Park by people, and the associated ecosystem services and benefits that the New Forest provides.

Scope

This report focuses on the natural environment and the special qualities that distinguish the New Forest from other parts of lowland England. These underpin the conservation designations and landscape character that provide the unique sense of place that is the New Forest National Park.

Approach

The assessment uses land-cover mapping, coupled with an assessment of habitat sensitivity to climate and consideration of adaptive capacity, to produce a series of maps showing the spatial distribution and magnitude of risk across the landscape. The assessments have been made based on a review of academic and other literature, supplemented by local knowledge and experience where possible. The consultation process has been non-exhaustive.

Mapping and geospatial analysis has been undertaken in Maploom® and is available as an accessible interactive platform: <https://nf-ccra.maploom.com>. An online summary of the study is also available: [URL to be added](#)

Habitat Assessment Results

More than one-third (37%) of the New Forest National Park is at high or very high risk of habitat loss or damage due to climate change, the distribution of these habitats are shown on the map and summarised in table 1 below. This includes freshwater and wetland habitats that are highly sensitive to changes in precipitation and temperature, coastal habitats that are unable to naturally migrate in response to sea-level rise, unique ancient pasture woodlands featuring a high proportion of drought sensitive Beech and heathland habitats that are vulnerable to wildfire.

Risk Rating	Ha	% of National Park Area	Land cover classes
Very High	6,286	13%	Freshwater, Coastal and estuarine habitats and Old Growth Pasture Woodland
High	12,055	24%	Peat bogs, valley mires and heathland
Moderate	17,054	34%	Riverine and bog woodland, other woodland, soils
Low	14,135	29%	Acid grasslands and Agriculture, Horticulture and Modified Grassland
Total Area	49,530	100%	

Table 1: Summary of the spatial extents of the different risk classes.

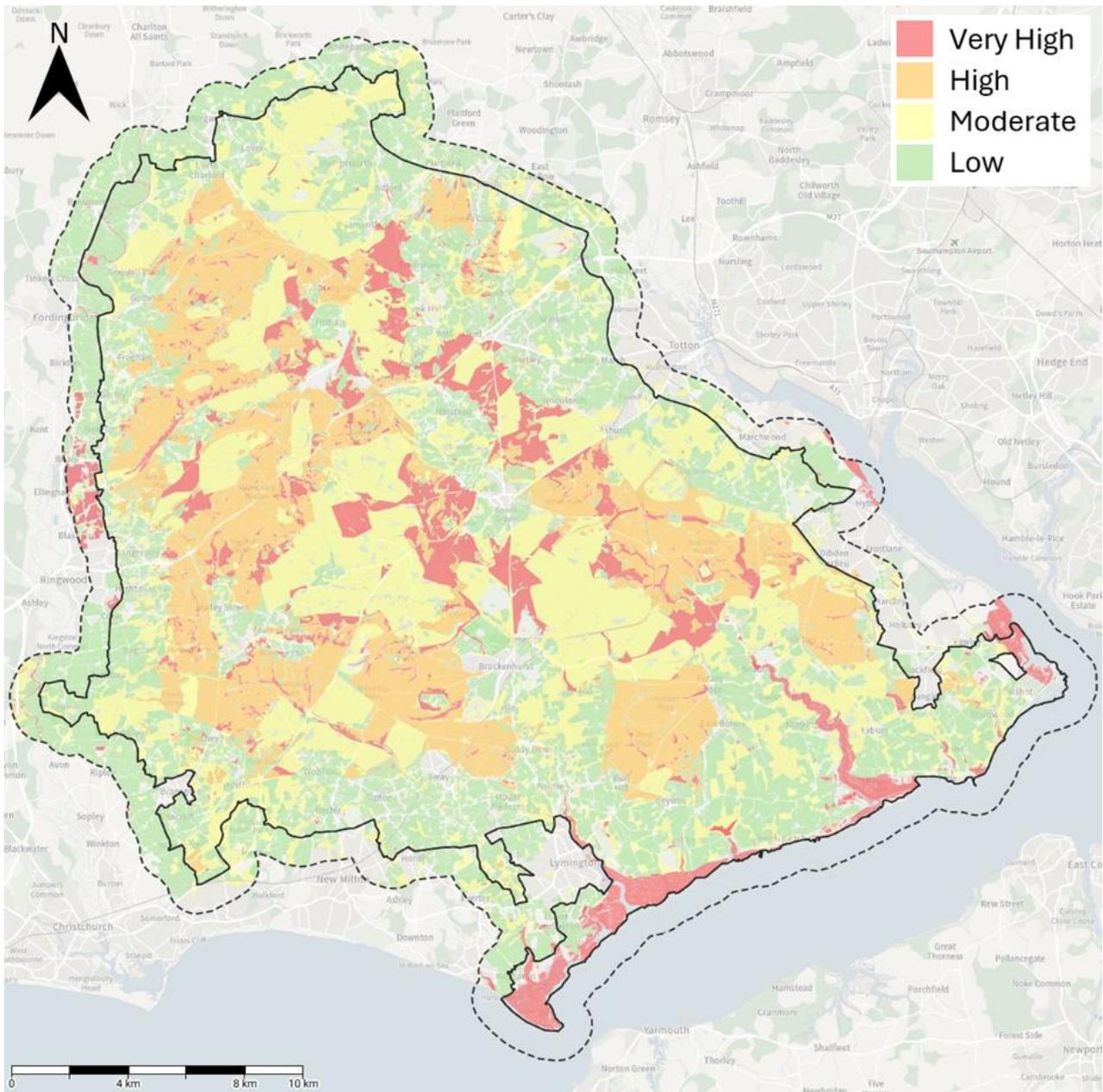


Figure 1: Map showing the spatial distribution of climate risk for New Forest habitats, based on land-cover data and a combined sensitivity / adaptability rating.

The assessment has been made based on analysis of habitat sensitivity to projected changes in local climate combined with a rating for adaptive capacity. These ratings and a brief justification are shown in table 2.

Table 2 (below): Summary of results from habitat assessment showing sensitivity, adaptive capacity, and risk.

Habitats	Sensitivity to Climate Change	Adaptive Capacity	Risk Assessment	Score	Rationale
Freshwater Habitats	Very High	Very Low	Very High	25	High dependence on precipitation, sensitivity to °C, exposure to multiple stressors that are amplified by temperature and volume of water
Coastal and Estuarine Habitats	Very High	Low	Very High	20	Habitats constrained in their ability to respond to sea level rise (sediment supply limited/risk of coastal squeeze) therefore high potential for habitat loss
Old Growth Pasture Woodland	High	Very Low	Very High	20	Beech has high drought sensitivity and forms a significant and important proportion of these woodlands. Habitats are fragmented; high grazing pressure prevents regeneration. Limited interventions possible due to protections.
Peat Bogs and Valley Mires	High	Low	High	16	Sensitive to changes in the quality, quantity & seasonal availability of water. Supports specialist species with narrow hydrological requirements and limited dispersal opportunities
Heathland	High	Low	High	16	Under modified conditions, depending on precipitation outcomes there is potential for heaths to become drier or wetter, with associated composition changes (including to associated peaty soils). Dry heaths are highly combustible, at increasing risk of wildfires.
Riverine and Bog Woodland	Moderate	Low	Moderate	12	Sensitive to precipitation. Anticipate some changes in species due to combined impacts of milder, wetter winters and hotter drier summers (trees, ground flora and associated vertebrates/invertebrates), very low natural regeneration but some ability to influence water flow through landscape hence low (not very low) adaptive capacity
Soils	High	Moderate	Moderate	12	Temperature and precipitation are key drivers of multiple soil processes influencing soil health, soils have some adaptive capacity however agricultural and other soils impacted by compaction, loss of organic matter or other manipulation are likely to have reduced adaptive capacity. Exposed soils are at risk of increased erosion from extreme drought and high intensity rainfall.
Other Woodland	Moderate	Low	Moderate	12	Increased temperatures are extending the growing season but also create favourable conditions for new pests and diseases to thrive. Extreme and unseasonal weather increase stress and mortality rates. Increasingly, suitability of species will change.
Acid Grassland	Low	Moderate	Low	6	The main risk is drought; community composition may shift to favour southern temperate and mediterranean species.
Agriculture, Horticulture and Modified Grassland	Moderate	High	Low	6	Activities supported under this category are dependent on water and sensitive to temperature but as they are highly managed adaptive capacity is high, and overall risk is low

Responses

Measures to mitigate the impacts of climate change on freshwater and wetland habitats are largely the same as those needed to improve ecological status, i.e. more effectively protecting habitats from pollution, restoring natural flow/hydrology wherever possible, retaining or increasing shade and natural features within channels, and creating new ponds and freshwater features across the landscape to increase resilience and connectivity.

Sea-level rise is a major socio-ecological challenge for the New Forest, for which anticipation and planning are essential, involving active engagement with statutory processes. Coastal ecosystems, some of which are already highly degraded, deliver a multitude of ecosystem services. Nature-based solutions have the potential to play an important role in maintaining and enhancing these services in the long term.

Both wet and dry heathlands require active management coupled with restoration to reduce fragmentation and isolation, mitigate wildfire risk, and restore hydrology to maximise resilience to climate change.

Risks to woodland habitats vary depending on a range of factors including species type and provenance, soil conditions and setting, stand size, and exposure to aggravating pressures. Pasture woodlands have been rated as very high risk due to the relative importance of Beech in New Forest pasture woodlands, their sensitivity to drought and the very low adaptive capacity of these habitats to naturally regenerate under high grazing pressure. Other woodland types (riverine and bog, managed broadleaf and conifer) have been grouped as moderate risk. Some of the commonest tree species are poorly adapted to cope with changing hydro-meteorological regimes and/or the pressure of new and existing pests and diseases. Both natural regeneration and the use of seed and saplings of species with southern provenance are strategies that are expected to increase woodland resilience to climate change. Woodland creation opportunities provide an important pathway to increase connectivity and size of wooded areas which also increases climate resilience.

Climate change risks to the natural environment are amplified, in nearly all cases, by the presence of other pressures such as fragmentation, pollution and agricultural intensification. Reducing these pressures will increase the resilience of the New Forest landscape and biodiversity to climate change.

Highly modified grasslands deliver some of the lowest biodiversity and ecosystem service values of the New Forest landscape - there are numerous opportunities to increase the contribution of these grasslands to climate resilience through improving soil health, restoring hydrology and water features, and reducing intensity of use to allow more habitat heterogeneity (hedges, edges, field margins).

In all cases, improved monitoring will be vital to understand how these habitats are responding locally to climate change, and to inform appropriate iterative management.

Results from review of wider risks of Climate Change

Alongside the habitat assessment, which forms the core of this study, a review of climate risks to 1) species, 2) pests and diseases, 3) natural capital and ecosystem services, 4) heritage, 5) landscape, and 6) the special qualities of the New Forest have been completed.

For species, the key points are:

- The New Forest is increasingly recognised for its exceptional species diversity, which includes an estimated total of over 20,000 species of animal, plant, and fungus. In the UK, climate change is already the second most important driver of change in terrestrial and freshwater species abundance and distribution, behind (primarily agricultural) land-use change.
- Species responses to climate change can generally be considered as changes in 1) distribution, 2) phenology and behaviour, 3) physiological and/or genetic evolution, and 4) (ecological) network interactions. Distribution and phenology are the most easily observed and widely researched.
- Climate change creates dispersal / expansion opportunities for multiple New Forest species groups, with the potential to improve biodiversity in other regions. Dispersal success depends on many factors including existing population size, dispersal capabilities, availability of habitat and food, and the pathways and barriers (e.g. verges, roads) associated with movement.
- There is likely to be a continuing increase in the number of new species of southern provenance arriving naturally, and increased survival of anthropogenically-assisted invasive non-native species.
- There is potential for loss of species that cannot tolerate the new climatic envelope of the New Forest, including tree and plant species that may lead to changes to the visual landscape. However, variations in microclimate can significantly exceed the projected magnitude of climate change, highlighting the importance of habitat heterogeneity and potential for habitat refugia to provide a buffer to climate change at very local levels, offering opportunities for species to persist beyond macroclimatic thresholds.
- The impact of range shifts on ecological networks is poorly understood but has the potential to impact ecosystem function and associated ecosystem services.

Key points from the remaining sections are:

- Pest, pathogen, and disease risks to people, animals, and plants are all increasing in response to climate change and will continue to increase in the future. This includes vector-borne diseases transmitted by ticks and mosquitos, fungal pathogens, and mobile insect pests. Increased monitoring and awareness are vital to inform early intervention.
- Biodiversity underpins the ecological condition and quality of ecosystems that together form the natural capital of the New Forest, that directly benefits people through delivery of a diverse range of ecosystem services. There is a high risk that these services will be modified by climate change, but also a wide range of opportunities to enhance natural capital whilst also increasing climate resilience and delivering adaptation. Mobilising public and private finance to support natural capital investment is an increasingly important opportunity for the New Forest.
- Climate change increases the risk of damage and destruction of heritage assets through mechanisms such as coastal erosion, water damage, subsidence, vegetation growth, fungal decay, and extreme event impacts. These will increasingly force a reconsideration of how some heritage assets are managed and maintained; in some situations, full or partial loss or extensive adaptation will be necessary. This may increase the potential for conflict within the planning system as sympathetic adaptation may not always be viable.
- Beyond risks to physical heritage assets, climate change has potential positive and negative impacts on cultural heritage including the local commoning community. Although climate

change will likely increase costs of livestock management, the landscape-scale conservation grazing provided by commoner's livestock will be increasingly recognised as an essential tool for climate resilience, including vegetation management to reduce wildfire risk.

Summary

The New Forest is special because much of the landscape has been protected from the land-use intensification of past decades. Going forwards, a combination of legal protection, active commoning, and conservation-informed forestry will help to sustain a high-quality and diverse mosaic of habitats.

Current evidence is unclear as to whether overall New Forest biodiversity and ecosystem services will increase, as is likely to be the case in the short term, or decline, which remains a significant risk in the longer term.

Much will depend on how effectively the collective interests of New Forest landowners, residents, and visitors can be aligned to address the needs of habitats and species, and how willing people are to support and implement change.

Climate Change Opportunities

As well as risks, climate change also creates opportunities. The New Forest is one of the most biodiverse landscapes in the UK, loved by many, with a rich cultural heritage, strong local communities, and a historic and thriving practice of biological observing and recording.

Climate change provides a shared challenge and opportunity to leverage the strengths of the New Forest to rebuild human connection with the natural environment, to understand and learn from change, to innovate, to show national leadership and to learn from and share solutions, approaches, successes and failures to support the collective challenge of increasing resilience and adapting to climate change.

The study outlines 13 opportunities that are grouped into six themes: **Lead, Learn, Enable, Protect, Manage, Restore & Create**. These opportunities are summarised as O1-13 in Table 2 below.

Lead	O1	<p>Link climate mitigation and adaptation with nature, and mainstream into decision-making, policy, and the planning process via the Local Plan</p> <ul style="list-style-type: none"> • Define what climate adaptation means for the New Forest • Centralise climate change adaptation as a core operational activity in the next iteration of the New Forest Partnership Plan • Develop a theory of change showing how activities and outputs align to deliver climate resilience • Identify and manage conflicting requirements • Review and revise (where needed) organisational structures, interest groups, and co-operation and collaboration mechanisms
	O2	<p>Build a strategic narrative linking climate change with nature, people, and the New Forest, and align messaging across public sector bodies and NGO's</p> <ul style="list-style-type: none"> • Clear messaging about climate change is essential and a prerequisite for mobilising action; this needs to be driven by a strategic narrative that clearly links climate change with biodiversity, wellbeing, and the local environment • Topical and engaging stories are needed to show what is happening and why it is happening, alongside information and practical guidance to show how individual and community actions make a difference
	O3	<p>Monitor climate change risk and impacts, track and report actions and progress</p> <ul style="list-style-type: none"> • Establish a New Forest climate adaptation monitoring programme, with clear objectives, accountability, and open reporting • Adaptation measures have significant potential to ignite activism and resistance, especially where short-term losses or costs are necessary to tackle longer-term needs. These need to be identified and strategies formulated with partners to address potential conflict, including development of a robust evidence base to inform debate and decision making
Learn	O4	<p>Expand and appropriately target research and monitoring efforts to provide the evidence needed to inform adaptation</p> <ul style="list-style-type: none"> • Support and strengthen the communities of people, organisations, and landowners/managers working with the aligned interest of sustaining and enhancing the resilience of the New Forest and its exceptional biodiversity for the long term • Increase accessibility to biological recording and conservation volunteering for a wider range of people; support with high quality information such as up-to-date, open-access habitat mapping and high quality, authoritative guidance. Support the regional and national systems that validate, curate and make biological records available for use • Learn from and contribute to research and monitoring efforts, and the development of best practices both within and beyond the New Forest; regionally, nationally, and internationally • Support climate-driven species dispersal by working with 'receiving' landowners, people, and organisations to share habitat management advice and improve connectivity, and develop evidence for adaptation and understanding of success factors and impacts
	O5	<p>Strengthen efforts to share data and knowledge across the community and between disciplines</p> <ul style="list-style-type: none"> • Climate change is disrupting land management practices that have been established over decades of experience. The rate at which climate change is taking place constrains the time available for experiential learning and potentially leads to an ongoing process of continually shifting goalposts. Opportunities that support knowledge exchange and accelerate community learning become far more

		important under these evolving conditions and require the integration of knowledge across multiple different practitioner and specialist groups
Enable	O6	<p>Motivate action by increasing public awareness and understanding of climate change as the most important driver of current and future environmental change in the New Forest National Park</p> <ul style="list-style-type: none"> • The most consistent indicator of concern for the environment, and the uptake of pro-environmental behaviours, is an individual's connection to nature. Pro-environmental behaviours and pro-nature-conservation behaviours are distinct, and form two types of human behaviours that need to be thought of differently. Pro-conservation behaviours are driven by the type of interactions people have with nature; the things people do are more important than the time spent • Recreational and tourist use of the New Forest provide opportunities to increase both pro-environment and pro-conservation behaviour through informed design of activities, places, and initiatives • The New Forest provides a living, dynamic showcase of environmental change and species responses to climate change across all the main species groups and lowland habitats in the UK. Many of these changes, such as those seen in plant, amphibian, and bird phenology, and in new species arrivals and changes in abundance, can be easily observed with minimal guidance in the forest or back garden. Encouraging and supporting activities that involve observing, recording, and sharing these changes provides a pathway to increase nature connectedness and encourage pro-social, pro-environment, and pro-conservation behaviours
	O7	<p>Support landowners and land managers to increase climate and biodiversity positive land management and use</p> <ul style="list-style-type: none"> • Land management is key to climate adaptation. More than 50% of the New Forest National Park is privately owned with minimal limitations or constraints on how this land is managed • Supporting management practices on privately (or publicly managed) land that include climate-friendly and biodiversity-positive approaches is essential
	O8	<p>Facilitate mobilisation of private finance and business investment in nature that supports New Forest species and landscape</p> <ul style="list-style-type: none"> • At a national level, there is recognition that UK Government funding is not sufficient to deliver nature recovery. The New Forest has unique attributes that need to be more effectively leveraged to mobilise private finance in support of climate resilience, nature restoration, and ecosystem service provision
Protect	O9	<p>Reduce non-climate pressures and directly protect the most sensitive or vulnerable habitats</p> <ul style="list-style-type: none"> • 97% of the land cover mapped within the New Forest for this report has been rated as moderately to very highly sensitive to climate change, with habitats that are compromised by altered hydrology or coastal squeeze at the highest end of this spectrum. With some exceptions, highly functioning ecosystems are more capable of adapting to climate change than degraded human-modified systems • Restoration of natural function, management of habitats to improve condition, and reducing or eliminating other pressures, all help habitats to adapt to climate change by increasing their natural capacity to respond • Climate change increases the urgency with which non-climate pressures need to be addressed, and may drive new requirements for management interventions

	O10	<p>Increase focus on habitat heterogeneity and maintaining climate refugia for species most at risk from climate change, provide guidance for landowners and managers</p> <ul style="list-style-type: none"> Local variations in microclimate that habitat heterogeneity provides can greatly exceed the magnitude of climate change expected over the next 75 years and provide critical refugia for species that are sensitive to macroclimatic conditions Explicit consideration of climate refugia / habitat heterogeneity in habitat management is essential to help retain climate sensitive species within the New Forest and reduce risks of disruption to food webs or other network interactions and dependencies from species losses With the exception of invasive non-native species, new species arrivals need to be monitored and where appropriate encouraged / supported through suitable habitat management
Manage	O11	<p>Explore the opportunities for adaptive management or other decision-making frameworks that integrate climate change at a landscape scale</p> <ul style="list-style-type: none"> Effectively tackling climate change requires co-operation beyond landowner or land manager boundaries Tools are increasingly being developed and improved to support landscape-scale decision making under climate change; examples include adaptive management, and the Resist Accept Direct (RAD) framework These types of tools provide opportunities to help facilitate multi-landowner co-operation to increase habitat resilience across the New Forest landscape
Restore & Create	O12	<p>Restore and create habitats to increase resilience and connectivity within the New Forest National Park, and support forest-friendly changes in land use that deliver climate and biodiversity benefits</p> <ul style="list-style-type: none"> Increasing the quality and size of protected areas has a positive impact on species dispersal, persistence, and adaptation Working with Local Nature Recovery Strategies, alongside local and regional landowners and managers, action is needed to continue to ensure effective management of habitats, alongside restoration and creation where possible, focusing on supporting natural processes, and improving habitat quality, extent, and connectivity
	O13	<p>Improve habitat quality and connectivity beyond the boundaries of the New Forest National Park</p> <ul style="list-style-type: none"> Changes in species distributions are increasingly likely in response to climate change, with potential benefits to species populations Successful range expansion depends on habitat availability, quality, connectivity, and on existing species population size and health Understanding range expansions and working with organisations and landowners in the receiving areas provide opportunities to support range expansions

Table 3: Summary of Identified Climate Change Opportunities