



Draft National Flood and Coastal Erosion Risk Management Strategy for England:

Strategic Environmental Assessment (SEA) - Non Technical Summary of the
Environmental Report

9 May 2019

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Non technical summary

This is a summary of the environmental report for the draft national flood and coastal erosion risk management (FCERM) strategy for England. The environmental report presents the results of a strategic environmental assessment (SEA) carried out as part of the preparation of the draft strategy. The environmental report and this summary are required to be published with the draft strategy.

The national flood and coastal erosion risk management strategy

The Environment Agency is required to develop, maintain, apply and monitor a strategy for flood and coastal erosion risk management in England. The draft strategy is a review of the strategy published in 2011. The final strategy is due for publication in 2020. It will apply to all sources of flooding and coastal change, such as coastal erosion and flooding from rivers, the sea and surface water. The national strategy provides an overarching framework for action by all people involved in managing the risks of flooding and coastal change. These are known as risk management authorities. They include the Environment Agency, unitary or county councils, district councils, internal drainage boards, highway authorities and water and sewage companies.

The vision of the draft strategy is a nation ready for, and resilient, to flooding and coastal change - today, tomorrow and to the year 2100. The draft strategy has been split into 3 high level ambitions:

- climate resilience places
- today's growth and infrastructure - resilient to tomorrow's climate
- a nation of climate champions, able to adapt to flooding and coastal change through innovation

To achieve these ambitions, the draft strategy presents a number of strategic objectives spanning the next 10 to 30 years. The strategic objectives are supported by over 30 shorter-term measures. The measures cover a wide range of activities needed to manage the increased risk of flooding and coastal change due to climate change. The strategic objectives and measures can be grouped under the following broad themes:

- planning for resilient places, this including information and approaches for updating plans and strategies for managing flooding and coastal change in different places
- delivering flood and coastal change resilience, this including different ways for managing the risk of flooding and coastal change and how projects are undertaken
- preparing for and recovering from flooding and coastal change, for people at continued risk of flooding or who have been affected by a flood event
- raising awareness of flooding and coastal change, engaging people in decision-making and improving collaborative working across everyone involved in risk management

Environmental context

The environmental report outlines the current state of the environment in England and future trends of relevance to the management of flooding and coastal change. As a national strategy this review concentrates on information and other plans, policies and

programmes relating to England. In areas that cross administrative boundaries there is a requirement for risk management authorities to effectively coordinate flood risk assessment and management. The review has taken this in account in the consideration of other key plans, policies and programmes. The importance of cross-border working is also recognised in the draft strategy.

The challenge of climate change and the urgency of managing and adapting to a changing climate is highlighted. So too are the risks of flooding and coastal change to places where people live, work and visit and also the many services people and businesses rely upon. There is increasing evidence of the impact of flooding on people's health and wellbeing. Also recognised are the positive benefits of the natural environment to health and wellbeing, such as through recreation and helping to relieve stress.

Many habitats and species are associated with the water environment, including rivers, wetlands and coastal areas. Some sites are designated at a national and international level for their importance for nature conservation. The water quality of many rivers continues to be affected by pollution from the land and other sources. The unsustainable abstraction of water is also affecting both groundwater bodies and surface waters. Climate change and predicted drier summers could further intensify these trends. Climate change is also predicted to lead to more intense rainfall events and wetter winters. This could increase soil erosion in some parts of the country that are already experiencing this, because of intensive agricultural production or urban development. Contaminated land, including historic landfill sites, could also be affected by increased flooding and coastal change.

There are many historic buildings and other features that are located near to rivers or on the coast and have close links to the water environment. These heritage assets are vulnerable to the effects of flooding and coastal change and to climate change. Historic buildings, trees and woodland, and rivers all contribute to the character of the landscape in urban and rural areas. In rural areas land management has an important influence on its character as well as other benefits for wildlife, recreation and managing flood risk.

Strategic Environmental Assessment

A Strategic Environmental Assessment (SEA) is undertaken to ensure that environmental effects are considered during the development of a plan or strategy alongside technical, economic or other considerations. In doing so it can also contribute to the promotion of sustainable development. The environmental report sets out the findings of the assessment.

To ensure the assessment focused on the likely significant effects of the draft strategy, a scoping phase was undertaken at an early stage. This concluded that significant effects on air quality were unlikely and therefore this issue was not assessed in detail. The potential for the draft strategy to have significant effects on other environmental issues was identified. These included: biodiversity, population and human health, resource management, water, climatic factors, material assets, cultural heritage and landscape. These environmental issues were assessed in detail using a set of assessment criteria to help identify potential negative and positive effects on the environment. These criteria supported the following high level questions on whether the draft strategy will:

- protect and recover nature
- improve health, wellbeing and equality
- improve and sustain resources
- protect and improve the water environment

- mitigate and adapt to climate change
- support sustainable communities and a prosperous economy
- conserve and enhance the historic environment
- conserve and enhance landscape character

The assessment focused on those aspects of the draft strategy which could give rise to significant environmental effects. Several measures were considered unlikely to do this and therefore were not assessed further. This included measures that:

- focus on the development of guidance on best practice
- propose the setting up of organisational structures
- seek to influence skills development in higher education and other organisations

The remaining measures and strategic objectives were assessed in groups relating to the broad themes already outlined and including:

- planning for resilient places
- delivering flood and coastal change resilience
- preparing for and recovering from flooding and coastal change
- raising awareness, engagement and collaborative working

The assessment has fed into the preparation of the draft strategy and has helped to influence its environmental content. Examples of this are the inclusion of additional strategic objectives and measures on the environment.

As part of the assessment consideration was given to possible alternatives to the draft strategy. This included looking at a 'do nothing' alternative that assumed no action is taken to revise the original FCERM strategy as published in 2011. This alternative was rejected because of a number of factors. In particular, the national strategy as published in 2011 indicates a 6 yearly review to ensure it remains fit for purpose. The 25 year environment plan also makes a commitment to revising it during 2019.

The assessment of alternatives also explored how the draft strategy has been developed. An extensive engagement process has informed the development of the draft strategy, including 5 working groups involving a wide range of stakeholders. This has helped to feed in different ideas on managing flooding and coastal change. Local level FCERM plans and FCERM projects that are developed in accordance with the final strategy will also need to consider alternatives for different places. These local level assessments will be at a more relevant scale to consider the implications of different alternatives for managing flooding and coastal change.

Summary of significant environmental effects and mitigation measures and enhancement opportunities

The following is a summary of the likely significant effects of the draft strategy as identified by the strategic environmental assessment. Also outlined are mitigation measures required to manage potential negative effects and enhancement opportunities to help realise greater environmental benefits. This includes a general summary of similar mitigation measures and enhancement opportunities as well as some specific ones that are outlined under each environmental topic.

The assessment of the draft strategy is proportionate to its national context and has considered potential impacts at the national level. The final strategy will set out a national framework for local flood and coastal erosion risk management strategies and projects.

Many of these local level strategies and projects will also have separate environmental assessments. These local level assessments are at a more relevant scale to consider potential environmental effects in particular places.

During the assessment a number of uncertainties were identified reflecting the context of the national strategy. This included, for example, uncertainty on the type of risk management tools which will be used in different places. The draft strategy contains no detailed locational information. As a result there was also uncertainty on the sensitivity of different places to new flood and coastal infrastructure or other risk management tools.

Biodiversity

The draft strategy could result in both positive and negative effects on biodiversity. This variation is mainly due to measures linked to the planning and delivery of flood and coastal risk management. The draft strategy has a longer term objective that all development will seek to support environmental net gain in all local places. The draft strategy also requires risk management authorities to achieve biodiversity net gain in all programmes and schemes. It is envisaged this will benefit biodiversity in the medium to longer term. Other measures in the draft strategy that encourage using the natural environment as part of risk management will also benefit biodiversity. This includes risk management solutions that work with natural processes and use natural flood management approaches, land management and sustainable drainage systems.

The assessment recognises that some tools for managing the risk of flooding and coastal change can have negative effects on habitats and species. The construction of new flood and coastal infrastructure, for example, can result in the loss, damage or fragmentation of habitats. In coastal and estuarine areas risk management activities that maintain levels of protection can result in the loss of inter-tidal habitats, such as saltmarsh. In other coastal locations, risk management can contribute to protecting and maintaining the ecological interest of particular types of habitats. In these areas there could be negative effects if resilience to flooding and coastal change cannot be sustained in the future.

Many designated sites of national, European and international conservation value are associated with freshwater, wetland, estuarine and coastal/marine habitats. A Habitats Regulations Assessment (HRA) is being prepared for the national strategy. This considers the potential implications of the national strategy for designated European sites. These include Special Areas of Conservation, Special Protection Areas and Ramsar sites. Initial findings of the HRA recognise the draft strategy includes measures that could benefit the conservation of European sites. Due to uncertainties at the national scale, however, initial findings conclude that a precautionary approach is taken. This is because it is not possible to be certain there will not remain the possibility of negative effects on the integrity of European sites. This is in terms of the implementation of local level plans, strategies and projects arising from the framework provided by the national strategy.

The overall effect of the draft strategy on biodiversity will depend on a range of factors at the local level. These include the type, scale and design of risk management tools used and the sensitivities of the local area. The assessment has taken into account the initial findings of the HRA process. Adopting a similar precautionary approach, the assessment identifies a potential negative effect on biodiversity, which could be significant at a national scale.

Mitigation for the identified negative effects includes existing requirements to undertake HRAs for local level risk management plans and projects. This is to determine whether they are likely to adversely affect the integrity of European sites and any required compensatory habitat. Working with Natural England and other stakeholders on initiatives, such as Habitat Compensation Programmes, will also support this.

It is recommended the further development of a national suite of resilience tools include tools that have the potential to benefit biodiversity. This includes risk management solutions that work with natural processes, use natural flood management and adopt sustainable land management. The involvement of Natural England is also recommended at a national and local level.

There is the opportunity to show how risk management solutions, such as sustainable drainage systems, can contribute to the natural environment in urban areas.

Population and human health

The draft strategy recognises the impacts flooding and coastal change can have on communities and businesses and the effects on people's health, wellbeing and livelihoods. The assessment confirms the effects of the draft strategy on population and human health are likely to be mainly positive, especially in the medium to longer term. It is considered many of these benefits are likely to be significant at the national scale. Measures associated with planning, delivery and preparing for and recovering from flooding and coastal change, in particular, are considered likely to benefit health and wellbeing. This is because they can reduce the potential hazards of a flooding event. They can also help to alleviate the wider anxiety and stress of experiencing and or being at risk of flooding. The assessment also identified at the local level some risk management tools can help to improve the provision of and access to green space. This can also improve health and wellbeing by encouraging physical exercise as well as the benefits of greater contact with the natural environment.

Areas of deprivation and social inequality can have increased vulnerability to the risk of flooding and coastal change and less able to cope with its consequences. It is anticipated the measures in the draft strategy are likely to make a positive contribution to tackling social deprivation and equality. This is for similar reasons as for health and wellbeing as well as using investment in risk management to support economic growth and regeneration. The draft strategy acknowledges that in some places it will not be possible to prevent flooding and coastal change happening. In response, the draft strategy emphasises the importance of putting in place a combination of risk management and planning tools to support people and businesses.

It is recommended the introduction of new funding or financing for risk management retains a level of prioritisation for deprived areas at significant risk. To ensure all sectors of the community are engaged in decision-making, additional support may be needed to enable this and tailored to the local area.

Resource management

The draft strategy is likely to have mainly positive effects on resource management, although it is anticipated these will not be significant at a national level. The assessment identified potential positive effects relating to protecting and conserving soils. This is mainly associated with the use of tools, such as natural flood management approaches and land management practices. These can help to reduce surface water runoff and soil erosion with benefits also for water quality and water resources. The potential for positive effects on soil conservation, however, is dependent on the local geology, topography and land use. Taking this into account, the overall effect on soil conservation is unlikely to be significant at the national scale.

The construction of new or improved flooding or coastal infrastructure will involve the use of resources and create waste. Other tools such as property level resilience, however, can help to reduce waste and resource use at the local level. This is because they can avoid the need for extensive repairs, rebuilding and refurbishment after a flooding event. Overall,

the effects on resource use and waste are likely to be localised and not considered to be significant at a national scale.

The further development of a national set of resilience tools should include consideration of potential benefits for protecting and conserving soils. Working at a catchment scale and involving land managers will help to identify places where risk management can align with priorities for conserving soils.

It is recommended that guidance for risk management authorities encourages sustainable construction practices and takes account of the whole life costs of risk management activities. This will help to promote the efficient use of resources and reduce waste.

Water

The assessment identified that the draft strategy could result in positive and negative effects on the water environment. New or improved flood and coastal infrastructure, for example, can affect the natural functioning of rivers and obstruct the passage of protected fish species. Other risk management tools that work with natural processes, however, can contribute to improving the condition of water bodies. This can involve reconnecting watercourses with a functioning floodplain or habitat creation, such as saltmarsh in coastal areas.

The draft strategy also encourages the expanded use of natural flood management approaches and strengthening links with land management practices. This has the potential to benefit water quality and the sustainable management of water resources. This is because these types of resilience tools can help to reduce surface water runoff and the input of pollutants and sediments to watercourses. Reducing surface water runoff can also increase infiltration rates and the recharge of groundwater resources. These benefits are likely to be further reinforced by the proposal to better align the planning of flooding and coastal change and sustainable water management.

The ability to protect and improve the water environment at the local level will depend on a number of factors. These include the type of risk management solutions, the local area and the sensitivity of the water bodies likely to be affected. Overall, it is anticipated the effect of the draft strategy on the water environment is unlikely to be significant at the national level.

At the local level Water Framework Directive (WFD) assessments are required to assure the compliance of risk management activities with WFD objectives. Sharing good practice on WFD assessments across the risk management sector could further support this. There is also the opportunity to use new and updated guidance to show how different resilience tools can contribute towards WFD objectives and water resources.

Climatic factors

The draft strategy is likely to make a significant positive contribution to adapting to climate change in the medium to longer term. Significant positive effects at the national level are anticipated. This is due to measures associated with planning and delivering risk management and preparing and recovering from flooding and coastal change. The assessment identified both positive and negative effects at the local level relating to climate change mitigation. This is because the building of new or improved flooding or coastal infrastructure will add to greenhouse gas emissions. Other risk management solutions, however, can have lower carbon footprints such as the use of natural flood management approaches. Risk management tools that include habitat creation can even help to store carbon, such as through woodland planting and peatland restoration. Overall, the effect on climate change mitigation is considered to be neutral. This is because increases or reductions in carbon emissions from risk management activities are unlikely to be significant in a national context.

To help mitigate local level effects on carbon emissions, an additional measure is recommended on encouraging low or zero carbon risk management approaches. This could be further reinforced by including similar encouragement in new and updated guidance for risk management authorities.

Material assets

Material assets have been defined to include homes, businesses, infrastructure, agricultural land and existing flood and coastal change risk management assets. The assessment concluded the draft strategy is likely to have mainly positive effects on material assets, with many of these benefits likely to be significant at a national scale. In particular, it is anticipated measures linked to planning and delivering risk management will significantly improve the resilience of communities, the economy and infrastructure. Measures associated with preparing for and recovering from flooding are also likely to be beneficial.

The further development of a national set of resilience tools for managing flooding and coastal change should take into account potential implications for agricultural land. Early engagement at the national and local level with the agricultural sector is also advised.

Cultural heritage

The draft strategy could result in positive and negative effects on the historic environment. The assessment identified this variation in potential effects was mainly due to measures linked to the planning and delivery of flood and coastal risk management. Many historic places are at risk of flooding and coastal change. As a result new or improved infrastructure or other measures that reduce the risk and consequences of flooding can be beneficial. The construction of permanent infrastructure and other tools such as habitat creation, however, can also have negative effects on the historic places. This can be due to impacts on the setting and character of historic places or through altering ground conditions with potential implications for archaeological remains. It is anticipated that with mitigation potential negative effects can be significantly reduced at the local level.

The draft strategy indicates in certain areas it may not be possible to provide resilience to climate change and reduce the likelihood of flooding and coastal change in the future. Depending on the location, this could have negative impacts on historic places. An increase in the frequency and severity of flooding, for example, could prevent the active use of historic buildings. This could lead to a deterioration in their condition that also affects the character of surrounding areas. In response, the draft strategy encourages the use of proactive and long term planning approaches in these areas to help inform decision-making.

The draft strategy commits risk management authorities to contribute to improving the historic environment through their investments. It also seeks to ensure that all new development will bring environmental net gain in all local places. The assessment concluded that potential effects on the historic environment at the local level area will depend on a number of factors. These include the type and scale of risk management solutions, their design and implementation and the sensitivity of historic places to change. Taking this into account, it is anticipated effects on the historic environment are unlikely to be significant at the national level.

At the local level plans, strategies and proposals for flood and coastal risk management will need to comply with requirements for environmental assessment. Cultural heritage assessments should inform this process and make use of local data on the historic environment. This can include historic landscape characterisation and Historic Environment Records held by local authorities.

The further development of a national set of resilience tools should include consideration of potential implications for the historic environment and involve Historic England. It is also recommended the Environment Agency continue to work with Historic England on investigating the impact of flooding on historic places. Risk management authorities should ensure they have access to specialist cultural heritage advice.

The introduction of flood resilience measures in building and material standards will need to take account of the sensitivities of historic buildings.

Landscape

The assessment identified the potential for positive and negative effects on the character of urban and rural landscapes. Similar to cultural heritage this variation relates in the main to measures linked to the planning and delivery of flood and coastal risk management. The construction of new risk management infrastructure can result in the loss of features that contribute to the character of place. Risk management projects, however, can also provide the opportunity to improve the character of landscapes in rural and urban areas and their use by people. This can be through habitat creation, enhancing the public realm and improving walking and cycling networks. In urban areas, the introduction of sustainable drainage systems can also contribute to networks of green space. In rural areas especially, the expansion of natural flood management approaches provides opportunities to enhance landscape character. Strengthening the link between risk management and land management practices has the potential to encourage longer term changes in land use and management.

In areas where it might not be possible to provide resilience to future climate change, the assessment identified the potential for larger scale landscape change. This could have positive and negative effects for people and nature. This will depend on the scale of the change and how people use the existing landscape for leisure, recreation or for their livelihoods. It is anticipated such areas are likely to be place specific and potential effects are not likely to be significant in a national context.

The assessment concluded the draft strategy's commitments to improve the natural, built and historic environment and support environmental net gain will benefit landscape character. At the local level effects on landscape character will depend on the type of risk management solutions, the local area and the sensitivity of the landscape to change. With mitigation at the local level, potential negative effects can be significantly reduced. Overall, it is therefore considered potential effects on landscape character are unlikely to be significant at the national level.

At the local level plans, strategies and proposals for flood and coastal risk management will need to comply with requirements for environmental assessment. Landscape character assessments should inform this process and make use of local data on landscape characterisation. There is also the opportunity to use strategic maps developed by the Environment Agency on the potential for working with natural processes across England.

The further development of a national set of resilience tools should include consideration of potential implications for the landscapes and involve Natural England. It is also recommended that organisations and land managers with an interest in landscape change and management are engaged at a national and local level. This includes the Forestry Commission, Natural England and the agricultural sector.

Cumulative effects

The assessment considered the potential cumulative effects of the draft strategy by looking at the following:

- the inter-relationships between the different environmental topics and possible interactions of the different measures in the draft strategy
- the interaction between the draft strategy and other national plans, policies and programmes

The assessment identified a number of inter-relationships between the environmental topics. An example of this is the positive effect of the draft strategy on climate change adaptation. This is reflected across the topics on climatic factors, material assets and population and human health. Another example is the potential benefits of risk management tools that work with natural processes, use natural flood management and encourage sustainable land management practices. This underpins a number of inter-relationships between topics on biodiversity and water as well as with resource management (soils) and material assets (agricultural land).

The assessment highlights the draft strategy could potentially lead to a focus of risk management activities in particular areas, such as urban and coastal areas. Depending on the local area this could affect wildlife habitats, historic buildings, and recreational green space. Aligning risk management investment with economic growth could also increase development pressure in a local area with potential effects on the environment. It is advised that strategic planning approaches and local level environmental assessments will help to mitigate these potential effects.

Overall, the assessment concluded the draft strategy is supportive and aligns well with national strategies on planning, climate change, resources, biodiversity, industry and clean growth. The draft strategy also strongly aligns with the commitments set out in the 25 year environment plan.

General summary of significant environmental effects

Overall, the assessment found that the draft strategy is likely to have effects that are predominantly positive or neutral. In particular, the assessment identified significant positive effects in relation to population and human health, climatic factors and material assets. Adopting a precautionary approach, the assessment identified a potentially significant negative effect on biodiversity although potential benefits were also noted. For other topics a mix of potential negative and positive effects were typically identified and a neutral effect indicated. This includes resource management, water, cultural heritage and landscape. For these topics on balance, and taking account of stated uncertainties, potential effects were not considered significant at a national scale.

General summary of mitigation and enhancement opportunities

A number of mitigation measures and enhancement opportunities were similar across the range of environmental topics outlined above. These included the:

- requirement for many local level plans and strategies to undertake strategic environmental assessments or sustainability appraisals
- requirement for many projects at the local level to undertake environmental impact assessments
- integration of environmental considerations as part of proposed guidance for risk management authorities
- provision of further guidance on net environmental gain and how this can include a wide range of environmental and sustainability aspects
- engagement at the national and local level with environmental organisations and stakeholders

- role of environmental organisations in supporting and contributing to incident response and recovery
- inclusion of environmental aspects in future skills, training and professional development and engagement activities
- need to invest in supporting skills and resources to enable the input of environmental specialists to local decision-making on flood and coastal change risk management
- use of the Environment Agency's strategic overview role to promote and champion good practice on the management of flooding and coastal change

Monitoring

The Environment Agency will develop arrangements for the monitoring and reporting of the final strategy's progress. The environmental report outlines proposals for monitoring the significant environmental effects of the national strategy. The topics we are proposing to monitor due to their significant environmental effects are population and human health, biodiversity, climatic factors and material assets. It is anticipated the majority of these can be monitored by using and adapting existing monitoring arrangements. This includes monitoring the number of households and businesses at risk of flooding and coastal change. It also includes annual monitoring on progress towards meeting Water Framework Directive objectives and the monitoring of environmental outcomes associated with risk management projects. The proposals for monitoring will be finalised in conjunction with the preparation of the final strategy.

This consultation

The environmental report has been published with the draft strategy. The consultation is open for 8 weeks, from 9 May 2019 to 4 July 2019.

To assist with this consultation, we have set out some specific consultation questions below on which we would welcome your views.

Question 1: Do you agree with the conclusions of the environmental assessment? (yes / no)

If not, please explain why.

Question 2: Are there any further significant environmental effects (positive or negative) of the draft strategy which you think should be considered? (yes / no)

If yes, please describe them.

Question 3: Are there further mitigations for potential negative effects or opportunities to achieve positive effects that should be considered for the final national FCERM strategy? (yes / no)

If yes, please give details.

How to respond

You can respond to this consultation online, by email or post.

You can view the consultation documents and questions online at on the consultation pages (<https://consult.environment-agency.gov.uk/fcrm/national-strategy-public>)

Please submit your response online. This will help us gather and summarise responses quickly, accurately and cost-effectively.

However, if you prefer, you can submit your response by email or post using our response form. You can download the response form using the above link. Please submit by email to: FCERMstrategy@environment-agency.gov.uk

Or by post to:

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