



National
Trust

shifting shores

Playing our part
at the coast

Love the coast...

94%

of people agree that

*'It's important to me
that Britain's coast is
kept beautiful for future
generations to enjoy'*

90%

of people agree that

*'It's important that the
planning system works
to protect the beauty of
our coastline'*

70%

of people agree that

*'I am concerned about
the impact of climate
change and extreme
weather for our coast'* ^[1]

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Foreword

There can be no doubt that sea levels are rising and coastlines are changing.

Average sea levels globally have been increasing since the beginning of the twentieth century, with rates accelerating in recent years. The oceans act as a global thermometer, rising as they warm, and as glaciers and polar ice sheets melt.

Here in the UK, sea levels are now on average around 15 centimetres higher than they were in 1901. This will increase the impacts of storms and tidal surges like those witnessed most recently during the extreme winter of 2013-14.

Precisely by how much sea levels will rise in the future is, of course, uncertain. But between 50 centimetres and one metre of sea level rise is likely for the UK by the end of the century with further increases beyond.

This means we can expect that our coastline will experience increased erosion and flooding. This will have major implications for the people who live and work there, and change the landscape for the millions who visit every year.

Managing a changing coastline will be challenging and require new approaches that work with, not against, nature. And coastal adaptation will be made even more difficult if we, as a society, make short-sighted decisions that store up costs and risks for future generations.

Climate change creates an imperative for long-term decision making, nowhere more so than on the coast. And there can be few organisations in the world so expert at taking a long-term view than the National Trust.

So we are very fortunate indeed that some 775 miles of our most treasured and dramatic coastline is under their long-term care and that the Trust is, as this report so aptly demonstrates, facing up to the challenges ahead.



John Krebs

Lord Krebs of Wytham Kt FRS
Chair of the Adaptation Sub-Committee of
the Committee on Climate Change

Playing our part

The coast is at the heart of what we do

We care for and share with everyone 775 miles of dramatic, diverse and ever-changing coastline around England, Wales and Northern Ireland.^[2]

Ten years ago the National Trust investigated how the coastline was likely to change over the next 100 years. Out of this research came our first Shifting Shores report in 2005,^[3] which had one clear message – as a nation we can no longer rely solely on building our way out of trouble on the coast.

Since then we have seen some important strides forward in public policy. But there's much more to be done. And as our understanding of climate change increases so too does the enormous challenge we face in managing the coast.

Shifting Shores committed the Trust to working with natural processes and adapting to coastal change – for instance by rolling back, moving buildings and infrastructure out of harm's way, and creating new space for nature.

Ten years on the message is even clearer. We have made our plans, now we must move from saying to doing – or run the risk of storing up problems for future generations.

In 2013 and 2014, a succession of winter storms and extreme tides saw the erosion and flooding that we thought would happen over the next five to 15 years occurring almost overnight.

This is a stark warning that coastal 'defence' as the only response to managing coastal change looks increasingly less plausible. As our strategy to 2025 *Playing our part* states: 'Climate change poses the single biggest threat to the places we look after. So we're actively adapting, managing coastal change and the impacts of severe weather.'^[4]

We must learn how to adapt and take the longer view. Above all we need to understand the forces of nature at work, so that we make well-informed choices about whether and where to continue maintaining hard defences or to adapt and work with natural processes.

Where we can, recreating a naturally functioning shoreline will free us from the sea defence cycle of construct, fail and reconstruct.

The Trust is on the frontline of change affecting both the natural and historic environment, but we can only meet these challenges by working with others – with coastal communities, partner organisations and people who care as much as we do about the coast.

The coming years will be critical to the future wellbeing of our coast.

The Environment Agency^[5]
estimates that over

700
properties
in England
could be lost to
coastal erosion
by around 2030

and that there are

247,000
business and
residential properties at
high risk
of flooding

With so many special and stunning coastal places in our care, we are underlining our commitment to playing our part by:

- Taking the long view
- Adapting to change
- Working with others
- Working with nature
- Sharing our love of the coast.

Shifting Shores – Playing our part at the coast looks at how far we have come, and how best to nurture a healthy, adaptable coastline for future generations to value and enjoy.

In short, we must:

- Be driven by long-term sustainable plans, not short-term engineered defences
- See coastal adaptation as a positive force for good
- Take action now – move from saying to doing
- Work closely with communities – with everyone having their say
- Act across boundaries – join forces with partners and people
- Innovate – have the courage to try out new ideas
- Aspire to a healthy coastline, shaped by natural forces.



Phil Dyke
Coast and Marine Adviser
National Trust

How far have we come?

Dramatic scenes such as this one of the railway line damaged by the winter storms in early 2014 at Dawlish in Devon, have brought into sharp focus the need for urgent action. The extreme weather events in recent years and the impact of climate change mean that we must now implement our plans for adaptation, and wherever possible create a natural, sustainable coastline that we can all be proud of.

For many years, the default response to flooding and erosion along the coast has been to 'hold the line' and build our way out of trouble. In some places defence is of course necessary, but increasingly we must view adaptation as having an equal role in the long-term health of the coastline.

Over the past decade, through both Shifting Shores and our own practical experience, we have been promoting discussion at a national, regional and local level about the importance of working with natural coastal processes and adapting to change.

Now is a good time to reflect on the lessons we're learning about adaptation and to consider how well the Trust itself is doing.

More widely, we also want to understand how far national and local government and other key players have moved towards an adaptive approach.



Right: Dawlish, Devon

The latest evidence

The Trust commissioned CH2M – leading independent environmental and engineering consultants – to examine how far we, and others, have come. The results have informed the recommendations contained within this report.^[6]

This new research reveals that we are ignoring the known risks of flood and erosion at the coast.

In England in 2005 the number of buildings at medium to high risk from coastal change was 117,000. By 2014 this had grown to 129,000 – an increase of 10%.

New houses and businesses are therefore still being built in areas prone to coastal change. It is likely that the same picture will emerge for Wales and Northern Ireland.

The research also shows that in the 10 years since our first Shifting Shores report, a range of potentially helpful public policies have been agreed. But it also suggests that these strategic policies are not yet informing practice on the ground.

For example, since 2010 Local Planning Authorities in England have been able to create Coastal Change Management Areas (CCMAs) through their local plans. These allow councils to ensure new development doesn't take place in areas at risk of erosion and flooding – and could inform plans to adapt or relocate existing 'at risk' properties, and the people who live in them.

Yet only 29 of England's 94 coastal planning authorities are currently using CCMAs. While a further 35 councils do have some form of policy on coastal change, it seems that the remaining 30 – almost a third – do not.

We also asked CH2M to look at our own performance over the last 10 years. This revealed that even within an organisation like ours, which is committed to working towards an adaptive response, that progress can be slow.

We must make a step change and embrace an adaptive approach in the day-to-day management of our coastal sites rather than pushing the difficult decisions into the future for someone else to deal with.

The research highlights that the Trust is a significant player at the coast, and that we need to lead by example and step up to the challenges of coastal change management.



Above: Brook Bay, Isle of Wight

On the ground

Looking back at National Trust places in earlier Shifting Shores reports, some good progress has been made.

At Mount Stewart in Northern Ireland we have plans to enable this beautiful garden to adapt in response to climate change and sea level rise. But Northern Ireland still needs a shoreline planning framework.

On the Welsh coast, many sections of the coastal path lost in the winter storms of 2013 and 2014 have been reinstated.

But, despite Wales having a footpath along its entire coastline, there is still no easy-to-apply mechanism in legislation to ensure the trail can be rolled back in a timely way as sections vulnerable to erosion fail.

At Studland on the Isle of Purbeck in Dorset, we've worked with the local community to develop a shared understanding of coastal change issues, and new future-proof beach huts are being designed which are more resilient to extreme weather.

Along the coast at Birling Gap in East Sussex, architectural plans for new buildings are being drawn up so that we can roll back in advance of the existing buildings being lost due to coastal erosion.

But at many of our coastal places we know we still need to do more to develop a longer-term vision around what adaptation will look like.



Adaptation in action

Around the coast our vision is becoming a reality. But as the pace of change accelerates, we must increasingly put our plans for adaptation into action and create a healthy coastline shaped by natural forces.

We care for all kinds of coastal areas from cliffs, beaches and dunes to estuaries and islands. As these six case studies show, our actions are very much guided by our first-hand experience and knowledge.

Taking the long view

Mount Stewart, Northern Ireland

Over the last decade, we've been harnessing support, gathering information and looking at the options open at Mount Stewart on the shores of Strangford Lough. It takes time to understand how best to adapt to the changes, but now we are able to act.

As the world changes around it, we want Mount Stewart to remain the special place it's always been. Almost 100 years ago, Lady Londonderry created the extraordinary gardens. To protect her jewel of a garden within its own microclimate, she enhanced an existing Sea Plantation on the shores of the lough. Frost is a rarity here and exotic plants such as New Zealand Christmas trees flourished.

But a recent climate change study has revealed that over time the Sea Plantation will struggle to do its job. We can now plot the scale and pace of flooding, erosion, rising ground water and saline intrusion, and highlight the impact they will have on heritage features in the garden. As lough levels rise so salt water will creep up the garden – reaching the Italian Garden and Lily Wood by the turn of the century.

'We have 80 years to future-proof the garden,' said Jon Kerr, General Manager at Mount Stewart. 'Land not at risk from extreme weather and flooding has been acquired and the planned relocation of the car park would allow the current space to be planted up as a dense shelterbelt – taking over some of the role of the Sea Plantation.'



Adapting to change

Dunwich Heath, Suffolk

This year, the Trust acquired another precious stretch of coastal heathland adjacent to Dunwich Heath. This is all part of long-term plans to create new habitats and secure the future of this constantly changing stretch of Suffolk coastline.

Re-named Mount Pleasant Heath, these 15 hectares (36 acres) of heathland have been incorporated into Dunwich Heath. People can now explore further afield and the wildlife already calling this land home has a secure future.

We've worked with RSPB Minsmere on a shared vision for this part of the Suffolk coast, and also with WREN, a not-for-profit business that awards grants for community, biodiversity and heritage projects.

Dr Helen Dangerfield, Head of Conservation, East of England, said: 'We know this part of the Suffolk coast is subject to constant change, and as erosion gradually reshapes the coastline it's vital that we plan ahead and create places for people to explore and for wildlife to thrive in well into the future.'



Left: Garden at Mount Stewart, Northern Ireland.

Above: The new area of heathland at Dunwich Heath, Suffolk.

Right: Sunset at Formby, Liverpool.

Working with others

Formby, Liverpool

Formby is the fastest eroding property in the Trust's care. It's predicted to lose 400 metres in the next century – changing this much-loved stretch of Sefton coastline forever.

The Trust cares for just one stretch of the historic coast, and we cannot work alone. The challenge here is to work not only with nature but equally with our partners, so that we can skilfully adapt to rapid changes in the long-term and on a landscape scale.

Kate Martin, Area Ranger for Formby said: 'Everything we plan to do at Formby affects our neighbours, as their plans affect us. There is a balance to be struck so that people and nature can co-exist. It's home to rare dune and woodland species such as natterjack toads and the iconic red squirrels.'

Formby is a complex coastal site, sitting on the edge of major urban areas, and a magnet for visitors. It needs significant investment to meet the high standards of land and nature conservation management the Trust believes in, and also to let us try out innovative ideas for adaptation.

We can all be fearful of future change at the coast, so we are involving the local community at every stage of our plans. We are developing a coastal adaptation strategy, working with our key partners, in which is embedded our desire to maintain a healthy coastline shaped by natural forces.

If we act now, Formby should offer great outdoor experiences and enhance the quality of life of the urban communities of Liverpool, central Lancashire and Greater Manchester for generations to come.



Working with nature

Gupton Farm, Freshwater West, Pembrokeshire

The far-reaching vision for Gupton Farm is breathing new life into one of Wales' most treasured and beautiful stretches of coastline.

Gupton Farm lies next to Freshwater West, one of the country's most famous beaches, and embraces wonderful wetlands and flower-rich grassland. Working with the local community, partners and neighbours, the landscape-scale Freshwater West Project is gradually restoring and extending reed beds, fen meadows and dune grasslands.

The effects of climate change are a reality, and as General Manager Jonathan Hughes said: 'Large parts of the farm are only 50 centimetres above high tides, and the wetlands will probably be tidal by the end of the century.'

'But we see this as an opportunity, not a threat. As the meadows get wetter we need livestock and a farming system that can cope. Combining wildlife management with public access and food production, we hope the farm will eventually become a nature-lover's paradise.'



Sharing our love of the coast

Godrevy, Cornwall

In a recent nationwide survey, 70% of people questioned named Cornwall as the place they would most like to visit. ^[1]

Godrevy is the seaside experience we all seek – big beaches, easy access, surf, sand and fun – a coastal portal to paradise.

More than 300,000 people are drawn to Godrevy each year. Set at the eastern end of St Ives Bay, this breathtaking sandy beach is popular with everyone – from surfers and families to walkers and nature watchers, and those who simply want to sit and admire the view.

'We want people to have a great time at Godrevy,' said Bill Makin, General Manager, 'but recent winter storms have brought home to us the increasing threat to access. Knowing that we could lose the current access road, coastal path and beach access, makes it all the more important that we work with others and take on board people's views.'

The Trust-owned private road is, in places, just three to four metres from the cliff edge and inland it skirts a Site of Special Scientific Interest and crosses a Scheduled Ancient Monument. We urgently need to find new ways to adapt to this shifting shoreline while keeping it as a special place for generations to come.

As the coast changes, so sustainable land management will see farming and wildlife adapt and thrive hand-in-hand. Wild flowers are returning and the rare shrill and moss carder bees have been spotted. We also hope to see more unusual birds including the grasshopper warbler and hen harrier; and increasing numbers of otters.

People will explore this spectacular coastline along new way-marked trails and with our new bird hide be able to get even closer to nature.



Making space for nature and people

Dunsbury Farm, Isle of Wight

In the future, the Military Road that reaches this far western corner of the Isle of Wight will slip into the sea. And the land we care for at Compton and Brook Bay will be lost too.

Tony Tutton, General Manager for the Isle of Wight said: 'This year we've taken Dunsbury Farm into our care. In anticipating these changes we're now looking to create a landscape rich in wildlife, which is both healthy and beautiful well into the future. In rolling back the Compton Bay coast we can make space for nature and people.'

At the moment we're losing coastline at the rate of 1.5 metres or more a year. And the Military Road (A3055), a nineteenth century coastal road on the south west coast of the Island has been threatened by coastal retreat for decades.

*Opposite page: Freshwater West, Pembrokeshire; Rock pooling at Godrevy, Cornwall.
Above: Dunsbury Farm, Isle of Wight;
Left: Fishing at Godrevy, Cornwall;
Right: Sunset over Dunsbury Farm, Isle of Wight.*

Our other farm at Compton plays an important part in the management of the downs and coast. The Galloway herd here has provided unbroken grazing for 50 years. Now the two farms can be combined to make a viable agricultural unit, and we can continue to offer great access for people to enjoy this remarkable corner of the island.

And we can only achieve all this if we work with other like-minded people. Together we can take on landscape-scale projects, improving habitats for farmland wildlife such as linnets, yellowhammers and Glanville fritillary butterflies.



The way forward

The impacts of climate change at the coast are becoming more apparent and widespread through increased erosion and flooding.

Hard coastal defences such as concrete walls have a limited lifespan, and will be increasingly prone to failure. As they fail we need to make decisions about whether or not to replace them.

We must also acknowledge that sea defences often cause unwelcome side effects such as beach lowering in front of sea walls.^[7] And, as a consequence of groynes, the starving of sediment supply to neighbouring areas.

Taking a longer view, we'll look to change land use in places we already own, and work with others beyond our boundaries to stitch together existing coastal habitats. This is in the hope that if they are bigger, more joined up and better managed they'll be more resilient to the impacts of a changing climate, and offer a coast that continues to be rich in wildlife.

Earlier in the report, we outlined our key actions for the future.

This is how they would look in practice.

Long-term sustainable plans not short-term engineered defences

Traditionally, engineers have led on the management of coastal change – on the assumption that we could engineer solutions.

Recent research^[6] identifies the disconnect between technical coastal change management and land use planning. As we make the switch from building our way out of trouble at the coast to planning our way out, this break in the system must be addressed.

There is good science and evidence at the heart of shoreline planning in England and Wales, but we need to make it accessible, informative and relevant to forward planning and economic development. If we fail to do this we'll simply be storing up problems for the future.

Coastal adaptation – a positive force for good

Projections show with increasing confidence that sea level rise will lead to increased erosion and flooding – bringing into further question the wisdom of relying solely on engineering solutions. But to compound this, new developments are still being built in locations that are vulnerable to coastal erosion and flooding.

We need to rethink our approach to coastal protection. We must embrace adaptive responses to managing coastal change as an equally valid approach to engineering responses – investing in adaptation where it's shown to be the best approach.

As we identified in 2005, there is also a continuing need for innovation in financial products and mechanisms. For example, with compensation and insurance that helps manage risks to property and enables vulnerable communities and the environment to adapt cost effectively.

Take action now – move from saying to doing

Despite the wake-up call of violent storms in the past few winters, our research^[6] paints a picture of the gap between the creation of shoreline management plans and their implementation.

There is a sense that a mechanism might be missing, and that this could be resolved by harnessing 'Coastal Change Management Areas' – in England within local plan-making, and in Wales with the development of a coastal adaptation toolkit.

In Northern Ireland we still need to demonstrate the value of shoreline planning and monitoring – where currently a co-ordinated approach is lacking.

Work closely with communities – with everyone having their say

Throughout our 2015 Coast campaign, we captured people's passion for the coast and why it is valued.

But we never underestimate the challenge people face when their properties are damaged by coastal erosion or flooding. Any form of realignment of the coast can create uncertainty and even hostility.

We want to work with communities – ask them what they want and believe is best and most effective, raise awareness of the challenges that face us all, and involve them in the decisions that need to be made.

Act across boundaries – join forces with partners and people

Natural processes take no account of property ownership boundaries. We realise that we can only achieve our goals in partnership with other landowners and stakeholders.

Achieving a coherent coastal planning and management policy is difficult due to the number of different bodies that have a role. But finding solutions that benefit all, such as large-scale realignment projects, requires a strong partnership approach.



Innovate – have the courage to try out new ideas

Along with others, we are trialling innovative approaches to coastal management and demonstrating the real power of adaptation. Currently, many of the ideas of roll back and realignment are in their infancy and still viewed with some suspicion.

There will always be a place for defence, but on National Trust coastline our approach will be adaptive and focused on 'moving out of harm's way'. We want this land to function in a natural way.

Coastal adaptation should be valued and resourced as an effective form of 'coast protection'. We need to find innovative ways of financing coastal adaptation schemes and compensation.

Aspire to a healthy coastline, shaped by natural forces

Increased flooding and erosion bring a real threat to our unique and much-loved coastline and coastal wildlife. We must anticipate coastal change and look to create new habitats further inland where nature can flourish, and which people can share.

It's vital that we create space for natural processes to function and for habitats and species to migrate. Creating new habitats takes time, and we must act quickly and make tough decisions where we know areas are at risk. We also need to look at how we manage our land and work with partners.



'Postcards' from the coast

Adapting to change is about more than the National Trust

Many organisations and communities around the country are also making a long-term commitment to working with the grain of nature to shape our future coastline.



Living with a changing coast

Building on the success of Defra's Coastal Pathfinder projects, the cross-channel Living with a Changing Coast (LiCCo) project sought to explore our relationship with the ever-changing coast, to understand the impacts of climate change at seven project sites and to work with communities to explore how they could adapt to those impacts. The sites were: Poole Harbour and the Exe Estuary in England and the Saire Valley, Orne Estuary, Veys Bay, Saane Valle and Sienne Harbour in Normandy, France.



Moving assets

New building techniques enable properties to be moveable to a new location when threatened by erosion. For example these chalet buildings developed by Bourne Leisure at Corton in Suffolk.



Beach debris removal

Debris and derelict coastal defences were removed from a section of beach at Happisburgh as part of the Pathfinder programme to make the beach cleaner, safer, and more attractive. North Norfolk District Council worked with the Happisburgh Liaison Group which included members of the community, Parish Council, RNLI and Lighthouse Trust and was one of a suite of projects to improve the location and manage coastal blight.

Innovative funding for coastal adaptation

Co-financed by Welsh Government and local authorities the £150 million capital value Coastal Risk Management Programme brings forward work identified in the Shoreline Management Plans. Innovative applies both to the financial model and to a vision for transformative projects that enable adaptation and deliver wider benefits for current and future generations. Potential projects are being scoped now in preparation for delivery 2018-2021.



New habitats for nature and protecting homes

360 homes at serious risk of coastal flooding now have improved protection, plus a new nature reserve next door. The Environment Agency built 7km of floodbank near Selsey, West Sussex, then breached the shingle beach. This created 183 hectares (452 acres) of saltmarsh and mudflats replacing those being lost elsewhere through coastal squeeze. Managed by the RSPB, Medmerry has already hosted breeding black-winged stilts.



What we need to do

National Trust challenges

Looking after our special coastal places is implicit in our strategy to 2025 – *Playing our part* – giving us the confidence to tackle the coastal change challenges we face.

- ❑ By 2020 we will have coastal adaptation strategies in place as a framework to inform community engagement and decision making for all our 80 coastal hotspots.

We will also...

- ❑ Seek to build strong relationships with vulnerable communities, stakeholders and partnerships to realise coastal adaptation projects
- ❑ Build coastal adaptation into our long-term business planning – recognising that the challenges of managing coastal change will play out over decades not years
- ❑ Provide training on coastal change management and adaptation to ensure our people have the right knowledge and skills.

The wider challenges

The National Trust is not alone in facing the risks to our coast. In our view, these key challenges need to be addressed by all those concerned with coastal management:

- ❑ Value and resource coastal adaptation as an effective approach to managing coastal change
- ❑ Ensure effective joint working across government departments and agencies, to turn coastal adaptation policies and strategies into tangible practice on the ground
- ❑ Empower local authorities to lead on coastal adaptation – ensuring they have the right policies, tools and resources to achieve this
- ❑ Develop a consistent Coastal Vision for sustainable management at both regional and local levels – linking the needs of people and nature
- ❑ Review how coastal groups (such as coastal forums) can best work and be effective in supporting governments and the relevant agencies at all levels
- ❑ Support innovation in coastal risk management – so that those at risk of flooding or erosion have a wider range of choices to manage their risk – a Pathfinder approach
- ❑ Maintain active and on-going engagement with coastal communities at risk
- ❑ Develop new financial products and mechanisms that help manage risk to property, and enable vulnerable communities and the environment to adapt cost effectively.

Above: Godrevy, Cornwall



The wider challenges

What others need to do

For England, this means:

Long-term planning

- ❑ Ensure Shoreline Management Plans (SMPs) are implemented through local plans, with widespread use of Coastal Change Management Areas (CCMAs) and improved reporting
- ❑ Make SMPs more user friendly for local authority planners
- ❑ Refine guidance for implementing SMPs, to avoid difficult decisions being deferred – and so that policies can be reviewed in response to storm events
- ❑ Develop a performance measure on coastal adaptation to sit alongside the existing Environment Agency performance measure on coastal erosion
- ❑ Maintain strategic coastal monitoring to provide an evidence base for decision making on coastal protection and adaptation.

Government co-ordination and innovation

- ❑ Develop a national policy and delivery framework for a clear Coastal Vision that supports adaptive coastal change management – on an equal footing with engineered defences
- ❑ Ensure local authorities have the lead role in driving adaptive coastal change management and giving support to local communities – and that the funds are in place to support them in playing this role
- ❑ Revise planning guidance to make CCMAs a requirement for local plans, where risk areas are identified
- ❑ Undertake a review of the role and function of coastal groups
- ❑ Provide greater detail on coastal risk/change management in planning guidance – including for Neighbourhood Plans
- ❑ Promote regional coastal forums as a vehicle to ensure coastal change management is considered within the context of wider issues
- ❑ Defra to develop an ‘innovative funding’ approach on coastal adaptation similar to the scheme being developed by Welsh Government.

For Wales, this means:

Long-term planning

- ❑ Develop a coastal adaptation toolkit for use by local authorities, partner organisations and communities
- ❑ Review role and function of coastal groups
- ❑ Establish a target or performance measure against which progress in moving the coastal adaptation agenda forward can be partially assessed
- ❑ Re-establish a coastal monitoring observatory – to provide evidence and trend data to inform coastal change management decision making.

Government co-ordination and innovation

- ❑ Review Technical Advice Notes (TANs 14&15) on planning for the coastal zone and flood and erosion risk management
- ❑ Implement the Coastal Risk Management Programme, and seek to ensure outcomes demonstrating adaptation
- ❑ As part of a review of Wales' Flood and Coastal Erosion Risk Management (FCERM) strategy, develop a national policy to support adaptive coastal change management and a framework for implementation
- ❑ Develop guidance on implementation of SMPs – turning policy into actions and including a review process to monitor progress and guidance around how SMP policy change is managed in response to storm events
- ❑ Make addressing coastal change and the implementation of SMPs a requirement within the development of local plans
- ❑ Ensure coastal change management and adaptation are reflected in relevant emerging legislation.

Right: Freshwater West, Pembrokeshire



For Northern Ireland, this means:

Long-term planning

- ❑ Establish Shoreline Plans which involve central government, local councils and all coastal stakeholders to ensure sustainable adaptive management of the coast
- ❑ Ensure Local Development Plans identify where development may be permitted in the coastal zone, to prevent future developments in erosion or flood-risk prone areas
- ❑ Develop a coastal adaptation toolkit for use by local councils, partner organisations and communities.

Government co-ordination and innovation

- ❑ Integrate responsibilities for coastal management into one government department to provide clarity, leadership and strategic direction
- ❑ Establish a forum to enable central and local government, coastal communities and all relevant stakeholders to co-ordinate on shoreline planning activity.

Knowledge-led approach

- ❑ Address the urgent need for research to understand past and present erosion and flood issues around the coast to include:
 - Map coastal erosion and coast flood zones (Coastal classification)
 - Undertake Lidar surveys of the whole coast to establish baseline topography
 - Establish coastal cell information to understand what happens at a local level
- ❑ Establish co-ordinated coastal monitoring programmes to provide evidence and trend data, and to observe and inform coastal change decision making.



Above: Mount Stewart, Northern Ireland

A vision for the coast

As a nation, we love and value our coast. But we want a natural coastline, not one ringed in concrete.

In 1965 our hugely successful Neptune Coastal Campaign was launched with a clear message to all lovers of the coast – help us save our precious shoreline from development and industrialisation.

Thanks to the generosity of thousands of people we have raised vital funds to

support our work in caring for the coast. In 2015 we marked the 50-year anniversary milestone with a Coastal Festival – celebrating past successes and looking to the future.

For the coast to flourish, it must be healthy and rich in wildlife. At the same time we must ensure its intrinsic beauty and cultural heritage is protected, and that it can be accessed and enjoyed by both local people and visitors. We also believe land can and should be productive – as long as it doesn't jeopardise these other aims.

Where possible, our principle is to work with nature and natural processes – the action of waves, weather, tides and changes in sea level – to adapt to a changing climate and shoreline.

We want to support and work closely with our neighbours, other landowners, local authorities, government agencies and conservation organisations. By working together we make sure the whole coastline is somewhere we can all enjoy and be proud of.

Our vision is for...

- The coastline to be clean and healthy, and shaped by natural forces
- The sheer beauty and diversity of our coastline to continue to inspire and refresh people
- Wildlife to be rich and abundant, not squeezed into narrow margins
- People to access and enjoy every stretch of coastline, not just land managed by the National Trust
- A coast that is alive with history, where heritage is understood and valued
- Coastal resources put to good use, contributing to the economy of coastal communities in a way that's both sensitive and sustainable.

Glossary

Adaptation – a process by which we can respond or adjust to environmental change, in this instance the natural process of coastal change, which is being accelerated by climate change.

Beach lowering – the lowering of beach levels in front of coastal defence structures increases wave action and often undermines the defence. This causes an adverse impact such as loss of amenity and often contributes to the failure of the defence.

CCMA – Coastal Change Management Area. Introduced by the Government in 2010, CCMA's can be created by local planning authorities to incorporate Shoreline Management Plan thinking into their local plans to guard against new permanent development being sited in areas at risk of coastal erosion and flooding.

Coastal squeeze – habitat loss which arises due to the high water mark being fixed by defence or development and the low water mark migrating landwards in response to sea level rise.

FCERM – Flood and Coastal Erosion Risk Management. This is the mechanism for delivering adopted Shoreline Management Plans led by the local authority but delivered by multiple agencies/bodies. They aim to reduce the risk of flooding and/or erosion to vulnerable properties and infrastructure.

Landscape scale – enlarging, improving and joining up areas of land to create a connected ecological network for the benefit of both wildlife and people.

Managed re-alignment – allows an area that is not currently exposed to flooding by the sea to become flooded by removing frontline coastal protection. Note – can also occur as a consequence of 'force majeure' i.e. unmanaged re-alignment.

Pathfinder – exploration of novel ideas to inform innovation of policy and practice.

Roll back – the relocation of buildings, infrastructure, shoreline and habitats away from areas at risk of flooding or erosion.

Shoreline Management Plan (SMP) – the formal public process (England and Wales) that brings together information (physical, socio-economic and environmental) leading to confirmation of an agreed policy for each section of shoreline (e.g. Hold the Line, Managed Re-alignment etc) Also known as Estuary Plans in larger estuaries – typically on the east coast of England.

SSSI – Site of Special Scientific Interest. An area in the UK with special wildlife or geology that is protected for conservation purposes from any kind of development.

Uncertainty – a situation where the current state of knowledge is such that the order or nature of things is not fully understood and thus absolute outcomes cannot be defined or guaranteed.

References

- [1] Research carried out by YouGov Plc for the National Trust. Total sample size was 5,047 adults in England, Wales and Northern Ireland. Fieldwork was undertaken between 3 and 7 July 2015. The survey was carried out online. The figures have been weighted and are representative of all adults in England, Wales and Northern Ireland (aged 18+)
- [2] For more information see our *Mapping our Shores* report, which celebrates our Neptune coastline campaign and reflects on the benefits to coastal landscapes of National Trust ownership and a properly functioning planning system over the last 50 years
- [3] National Trust *Shifting Shores – Living with a changing coastline* 2005
- [4] *Playing our part* – National Trust strategy to 2025 (2015)
- [5] Environment Agency report *Managing flood and coastal erosion risks in England* (1 April 2014 to 31 March 2015)
- [6] CH2M report *Public policy and adaptive approaches to coastal change management: How are we doing?* October 2015
- [7] *Marine Climate Change Impacts Partnership Annual Report Card 2007-08* <http://www.mccip.org.uk/annual-report-card.aspx>

Photography

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How far have we come? (page 6) – Dawlish, showing damage to the railway tracks and road © Andy Styles Photography.

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