



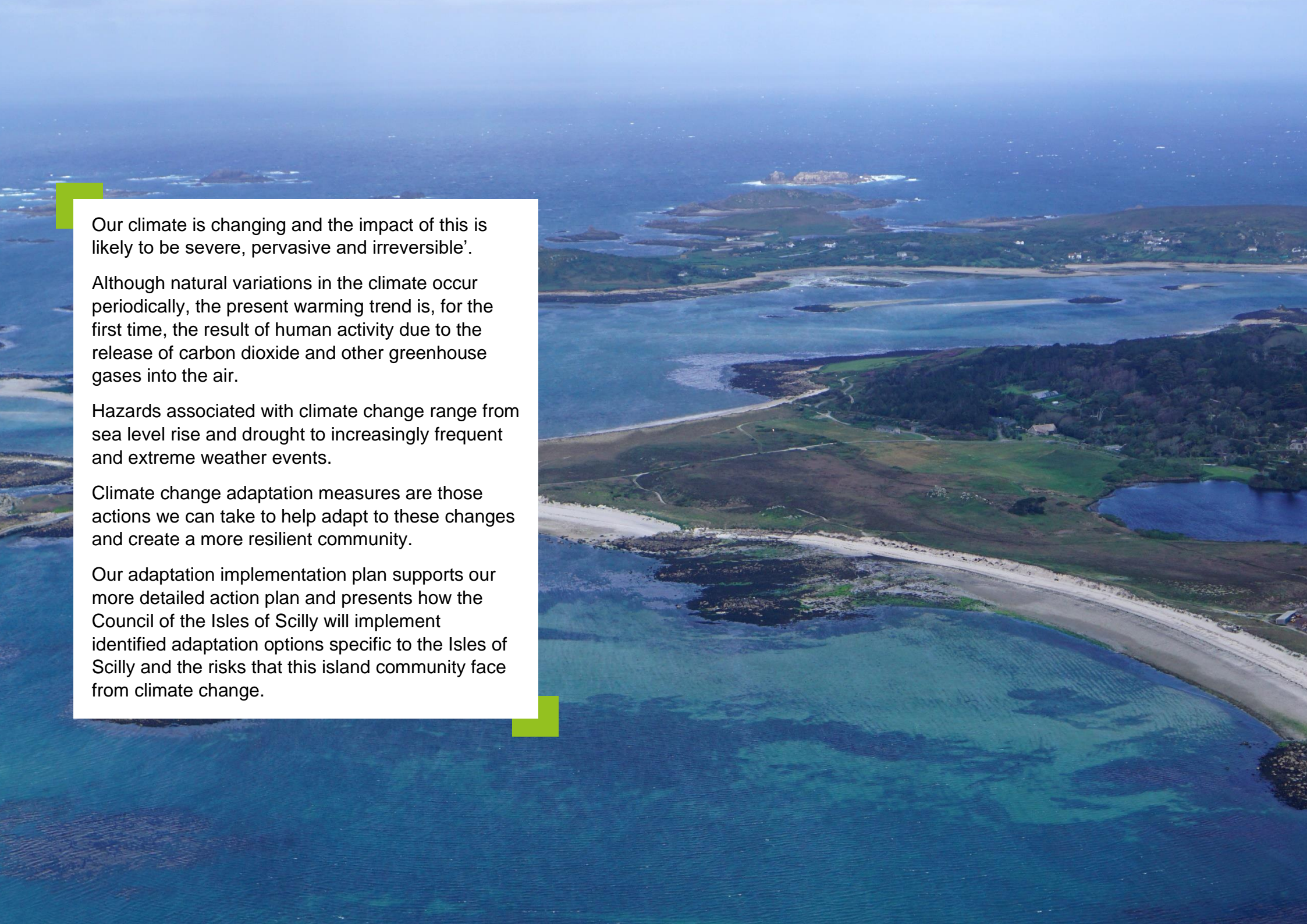
Climate Change Adaptation

ISLES OF SCILLY RESILIENT ISLANDS STRATEGY

Implementation Plan

Council of the Isles of Scilly



An aerial photograph of a coastal landscape. In the foreground, there's a sandy beach and a shallow, turquoise-colored bay. The water transitions to a deeper blue further out. Several small islands and peninsulas are visible, some with green vegetation and a few buildings. The sky is a pale blue. The text is overlaid on the left side of the image, within a white box that has green decorative elements on its top-left and bottom-right corners.

Our climate is changing and the impact of this is likely to be severe, pervasive and irreversible'.

Although natural variations in the climate occur periodically, the present warming trend is, for the first time, the result of human activity due to the release of carbon dioxide and other greenhouse gases into the air.

Hazards associated with climate change range from sea level rise and drought to increasingly frequent and extreme weather events.

Climate change adaptation measures are those actions we can take to help adapt to these changes and create a more resilient community.

Our adaptation implementation plan supports our more detailed action plan and presents how the Council of the Isles of Scilly will implement identified adaptation options specific to the Isles of Scilly and the risks that this island community face from climate change.

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1. What is Climate Change Adaptation?

Our climate is changing, and we must adapt. More frequent and intense droughts, storms and heat waves, warming oceans and rising sea levels will affect the services we rely on and impact the way we all live.

This is particularly true for coastal and island communities where the built and natural environments are vulnerable to sea level rise and increased frequency and intensity of extreme weather events.

Adaptation is about responding to these changes and preparing for what may come in the future – the challenges and the opportunities.

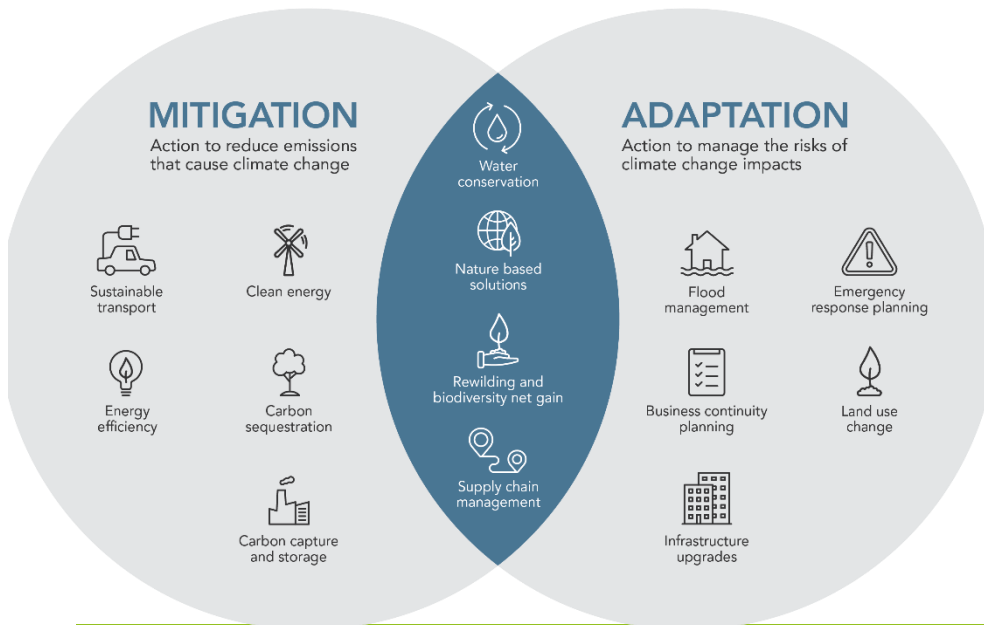
This may mean:

- Preparing homes and offices so that they remain cool in hotter summers.
- Using water more efficiently and increasing the use of rainwater harvesting systems for homes and businesses.
- Planting different varieties of trees and crops that are less vulnerable to new pests and diseases, storms and wildfires.
- Adapting our utility and transport infrastructure so that it is more resilient to extreme weather events.

It is important to recognise that adaptation is distinct from mitigation, although interconnected and, in some cases, with co-benefits (see Fig 1.). Whereas adaptation focuses on making human and natural systems more resilient to climate impact, mitigation focuses on reducing greenhouse gas emissions, the cause of climate change. Nevertheless, adapting to climate change will be necessary regardless of how much we cut our greenhouse gas emissions. This is because historic emissions have already changed our climate and will continue to do so in the decades to come.

Figure 1 Actions to reduce emissions (mitigation) and manage risk (adaptation)

BUILDING CLIMATE RESILIENCE



2. Why Adapt?

The Isles of Scilly have a unique micro-climate compared to much of the UK. It is a temperate climate with limited seasonal variations.

For example, there are on average approximately 142 rainy days (days when rainfall exceeds 1 mm) on the Isles of Scilly and

average

Storm Event

On the 16th – 17th December a major storm hit the Isles of Scilly, which significantly damaged the sea defences at Porthcressa and overtopped the sea defences at Old Town and Porthloo on St Mary.

maximum temperatures reach around 19.7°C in the summer months and 10.6°C in the winter months.

Using the latest data from the UK Climate Projections (UKCP) database, it is possible to project how the UK climate may change in the future under low, medium and high emissions scenarios.

Under a high emissions scenario (i.e., if we have limited impact on the reduction of greenhouse gases), the following trends are projected for the Isles of Scilly by 2040:

- Warmer temperatures across all seasons.
- Hot summers are expected to become more common (like the 2018 event).
- Mild winters are projected to increase in number (though cold winters will still take place).
- Rainfall is likely to increase in the winter and decrease significantly in the summer with increased intensity of heavy downpours (more extreme events).
- Sea level rise (20-30 cm by 2040).

1989 / 90

Storm Event

On the 18th of June, Storm Eunice brought winds of 79 mph coupled with a storm surge coinciding with the Full Moon. The Isles of Scilly experienced strong winds, significant spray over the sea wall at Hugh Town and some power supply dips.

2014

Storm Event

Between January and February 2014, six major storms hit the UK. During two of these events, a combination of strong winds, significant waves and a tidal surge, resulted in the overtopping of flood defences at Hugh Town.

2018

Drought

In the summer of 2018, the Isles of Scilly experienced a prolonged period of drought with just 23% (11 mm) of its average annual rainfall for the month of June and 49% (34 mm) for the month of July, impacting ground water supplies.

2021

Storm Event

In July 2021, the Met Office issued an amber, then a yellow weather warning (winds up to 75 mph). This required the RNLI to work through the night to support several vessels (no less than 22 people) in difficulty around the islands.

2022

2022

Heatwave

In July and August, the MET office and the UK Health Security Agency issued their first ever “Red Extreme” heat warning and Level 4 heatwave alert in the UK. Although the Isles of Scilly were not significantly impacted by this heatwave, the potential for sudden increases in temperature and heatwave-associated thunderstorms on the islands brings an increased risk of drought and flooding in future events.

3. The Adaptation Process

There are practical actions that we can take as individuals and as a community to increase our resilience to a changing climate.

Over the course of 2022, the Council has taken practical steps to understand the risks to the Isles of Scilly, engage with the community and stakeholders and identify prioritised adaptation options that complement the existing measures already in place.

The process

To identify suitable adaptation options, the Council:

- Undertook an Isles of Scilly climate change risk and vulnerability assessment.
- Researched, reviewed and logged government guidance, academic literature and case studies from across the world of practical adaptation solutions in island and coastal communities.
- Engaged with the community and key stakeholders to identify those assets, locations and services which are valued most.
- Assessed and prioritised adaptation options based on their value to the community and their likely cost-benefit.
- Created a Isles of Scilly Resilient Islands Strategy that contains our plans for a resilient future.

This implementation plan consolidates and summarises the key steps we will take to successfully deliver our adaptation activities.

The adaption process is iterative and requires repeating periodically to make best use of updated climate data and to ensure we continue to deliver community needs.

This initial round of assessment has identified:

22 hazards
75 total risks
31 high risks
90 potential adaptation actions

Many of the actions identified as suitable for use on the Isles of Scilly have multiple, often interconnected benefits to the community, its infrastructure, agriculture and the natural environment. Simple actions such as reducing water use will benefit the whole community.



The following sections summarise the key early adaptation activities that we can do as individuals and as a community.

4. What can I do?

Adaption actions that you can take advantage of now					
Action	Sector(s)	Impact	Other benefits	Previous action	Timescale
Install rainwater harvesting systems.	Natural / Built Environment, Business & Infrastructure.	Collecting rainwater can reduce dependency on groundwater / desalinated water during times of drought. Rainwater storage will reduce run off rates during a storm, reducing flood risk.	Increases community and visitor awareness of water use as a limited resource.	Climate Adaptation Scilly rainwater harvesting grants - Government funding for businesses to fit external storage tanks. South West Water is providing rainwater tanks for homes.	Short
Increase flood resilience.	Built Environment, Business & Infrastructure.	Flood resilience measures on individual buildings or properties can prevent flood water from entering. Measures include flood boards for doors, sealing utility entry points, toilet plugs, waterproofing external walls and sewerage non-return valves.	Early preventative measures reduce the economic impacts and carbon emissions of repair works. Homes and businesses are likely to make a faster recovery after flood events.	Cornwall and Isles of Scilly Property Flood Resilience Delivery Project. Funding and advice available for residential properties.	Short
Check insurance cover & conditions.	Built Environment & Business.	Insurance cover offers protection against the cost of damage to property and possessions, which may become more frequent due to climate change.	Reduces the impact of economic losses and stress or anxiety due to flooding.	Advice on flood insurance is available via the Government website .	Short

Increase energy resilience.	Built Environment, Infrastructure & Business.	Installation of battery backup storage increases resilience for a short period of time to supply interruptions caused by extreme weather events. These can be fitted alongside solar panels to reduce energy costs further.	Avoiding peak electricity use and producing renewable energy can reduce emissions.	The Isle of Scilly Smart Islands project is part of a move towards low carbon power supply.	Short / Medium
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5. What can we do together?

Community / Stakeholder actions - short term to long term

Action	Sector(s)	Impact	Other benefits	Previous action	Involvement	Timescale
Update Contingency Planning.	Built Environment, Business & Infrastructure.	<p>Flooding may mean a loss of key services / utilities. This poses a serious, interconnected hazard to all sectors and the community.</p> <p>Scenario development and contingency planning are key to understanding the risks and opportunities.</p> <p>This would require community wide action including input from all sectors, not least key businesses, transport, voluntary and emergency services representatives.</p>	Awareness of contingency planning prompts communities to enhance their (low carbon) energy self-sufficiency.	Devon, Cornwall and Isles of Scilly Local Resilience Forum Multi-Agency Flood Plan (2016)	Action requires cross sector collaboration with key stakeholders, including: the Isles of Scilly Fire Rescue Service, the Tresco Estate, the Council of the Isles of Scilly, the Duchy of Cornwall, the Isles of Scilly Wildlife Trust, the Devon & Cornwall Police and the Environment Agency.	Short
Wetland creation and maintenance.	Natural Environment, Infrastructure.	Action involves management of drainage ditches to create new (or to maintain existing) wetland areas. This helps to improve groundwater	Wetlands provide an excellent habitat for carbon sequestration. In	Wetland conservation and habitat management is	Requires technical guidance to assist local trusts, land managers and an	Short / Medium

Community / Stakeholder actions - short term to long term						
Action	Sector(s)	Impact	Other benefits	Previous action	Involvement	Timescale
		quantity as well as quality. Freshwater aquifer replenishment also helps to reduce drought impacts on groundwater levels, therefore protecting the islands' water supplies.	addition, natural wetlands provide some of the most biologically diverse habitats in the UK.	already being undertaken by the Isles of Scilly Wildlife Trust in an effort to reduce the impacts of saline flooding.	active community to volunteer labour. Key stakeholders would include the Tresco Estate, the Council of the Isles of Scilly, the Duchy of Cornwall, farming tenants and the Isles of Scilly Wildlife Trust.	
Dune stabilisation & strengthening.	Natural & Built Environment, Infrastructure.	Well managed dunes can provide a high degree of protection from flooding and erosion. With rising sea level and more severe storms, overtopping of dune systems and embankments would also increase the salinity of low-lying freshwater wetlands inland. Electricity and telecoms cables pass through dunes on many of the inhabited Isles of Scilly. Dune management is already being implemented on the Isles of Scilly but as sea levels rise, the use of managed and strengthened dunes will need to increase. Dune stabilisation is a nature-based	Dune stabilisation and strengthening provides additional habitat. It also has a significantly lower carbon footprint than rock armour or concrete sea defences. Maintains the natural appearance of the coastline	Dune fencing on Lower Town Beach . Porth Hellick dune extension, St Agnes rock bags at the core of Periglis dunes. Bryher increasing height of natural boulder bank at the Green (S).	The Environment Agency, The Council of the Isles of Scilly, South West Water, Western Power, Openreach	Short / Medium

Community / Stakeholder actions - short term to long term						
Action	Sector(s)	Impact	Other benefits	Previous action	Involvement	Timescale
		<p>solution generally involving dune grass planting, thatching with plant debris and / or fencing along the seaward face.</p> <p>Dune construction / strengthening incorporates engineered structures at their core reproducing the form of natural dunes to provide additional protection.</p> <p>Both are generally a lower cost measure when compared with hard engineered sea defences. However, dunes will require ongoing maintenance as they may be damaged by storm waves and human activity.</p>				

6. Next Steps

The early actions outlined above only summarise our full Isles of Scilly Resilient Islands Strategy, which identified over 30 climate change impacts as priority areas for the Isles of Scilly, including drought, water quality, flooding, erosion, and extreme weather events.

To address these impacts, the Plan outlines 90 actions, grouped into 15 prioritised pathways, where the Council and key stakeholders can expand upon what was already delivered to reduce current and future impacts.

This Implementation Plan facilitates the execution of the Action Plan and enables us to 'take action'.

Figure 2 Taking Action

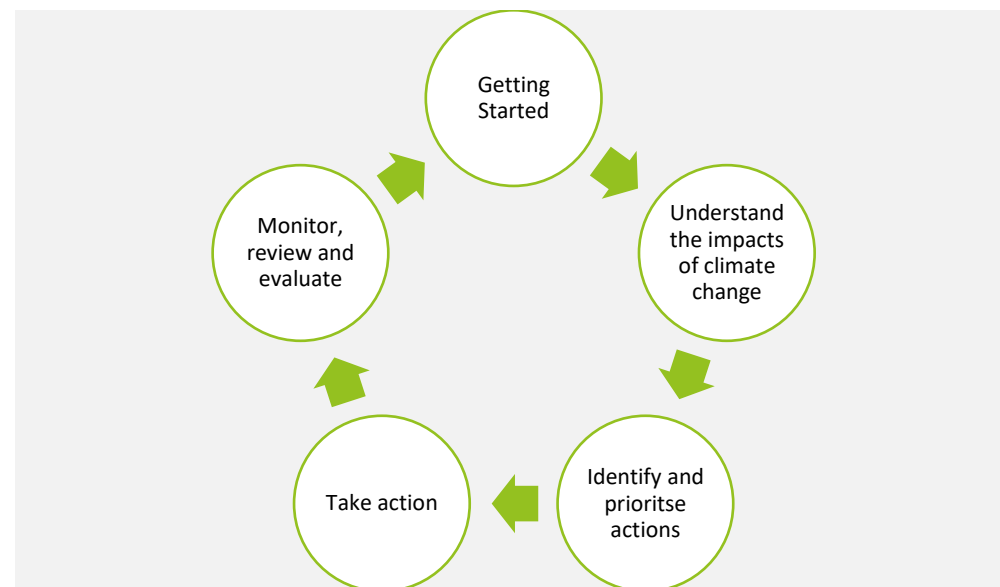


Table 1 Isles of Scilly Resilient Islands Strategy Implementation Plan

Isles of Scilly Resilient Islands Strategy Implementation Plan		
What	Who	When
Create a Climate Change Adaptation Action Steering Group with the purpose of monitoring, measuring, analysing and driving progress, including the continual improvement of data, methods and outcomes.	Lead: Council Support: representatives from all Isles of Scilly stakeholders	September 2023
Enhance community awareness, networks, capacity, training and outreach.	Lead: Council Support: Steering group	Ongoing
Liaise with key stakeholders to ensure that the identified Isles of Scilly adaptation options are considered within their respective asset planning activities.	Lead: Steering Group Support: reps for all Isles of Scilly stakeholders	September 2023

Develop a monitoring and evaluation strategy with key performance indicators to measure success and shortcomings, and to support continuous improvement.	Lead: Council Support: Steering Group	December 2023
Develop an annual reporting framework including a communication plan to all key stakeholders.	Lead: Council Support: Steering Group	February 2024
Conduct research to identify baselines, indicators and data sources for measuring progress of each adaptation option, including data associated with identifying tipping points and trigger points.	Lead: Council Support: Representatives for all Isles of Scilly stakeholders	November 2023 (ongoing)
Develop action-specific action plans (ASAPs) for each priority adaptation pathway, including, for example, full feasibility studies and deeper evaluation of adaptation options.	Lead: Council Support: reps for all Isles of Scilly stakeholders and contractors	March 2024