Passing the baton

Sharing learning from coastal change adaptation case studies

Webinar 16 April 2024

sniffer knowledge brokers for a resilient Scotland

What we'll cover

13.00 Welcome

13:10 Some round 2 projects (2023-24)

- South Ayrshire
- Scottish Borders
- Fife

13:22 Introducing the round 3 projects (2024-25)

- Angus
- Argyll & Bute
- City of Edinburgh
- Fife
- Highland
- Moray
- North and South Ayrshire

14:00 Panel discussion / Q&A

15:00 Close

- Presentations are recorded
- Q&A is not
- Please mute your microphone and keep cameras off if not presenting
- Raise hand or type question in chat

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Learning together

Coastal Change Adaptation Workshop #3

Tuesday 16th April 2024

Dr Alistair Rennie
DynamicCoast.com
DynamicCoast@nature.scot
@DynamicCoasts

Strategic Setting

How SG envisages the case study process to build the evidence base year on year?

CCC review of Scotland's Progress:

Majority of Scotland's shoreline does not have SMPs, meaning **most local authorities do not have a plan** to manage coastal erosion risk.

Absence of monitoring means many climate risk are unknown.

Adaptation needs to be embedded across full range of government (incl local authorities)

But we are making progress:

1) CCA Funding online (but £ pressure in LAs)
2) Many LA starting CCAPs
3) There is a need to showcase various aspects & undertake works on the ground & with communities.

The Case Studies showcase our learning and provide knowledge-exchange opportunities between authorities & communities.


Community engagement in planning, Orkney

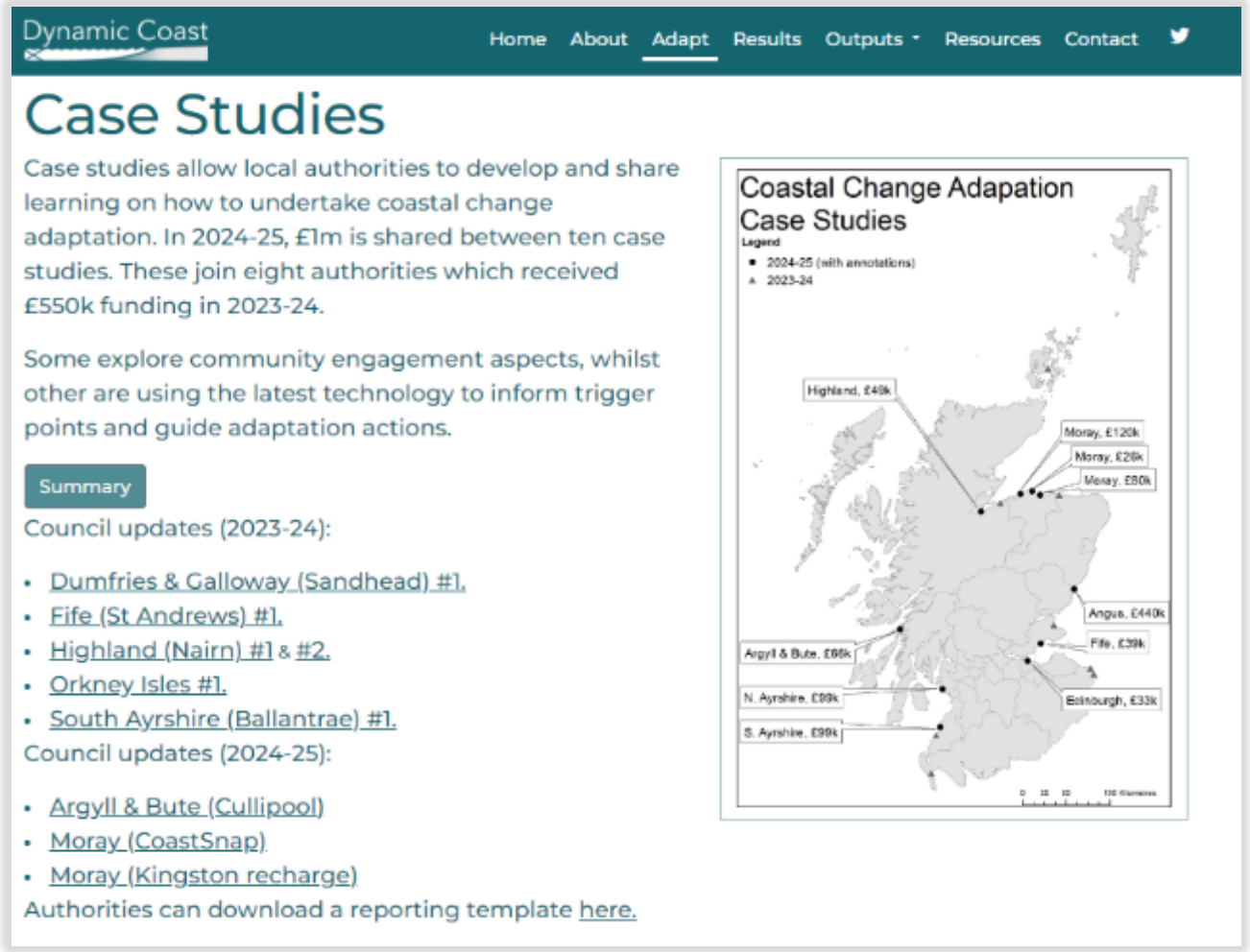

SG / Authority learning. Highland

Knowledge-exchange

We are keen to share our knowledge, help one and other and demonstrate action.

Great resources on

- DynamicCoast.com/cca
- Sniffer/Coastal Change Adaptation.



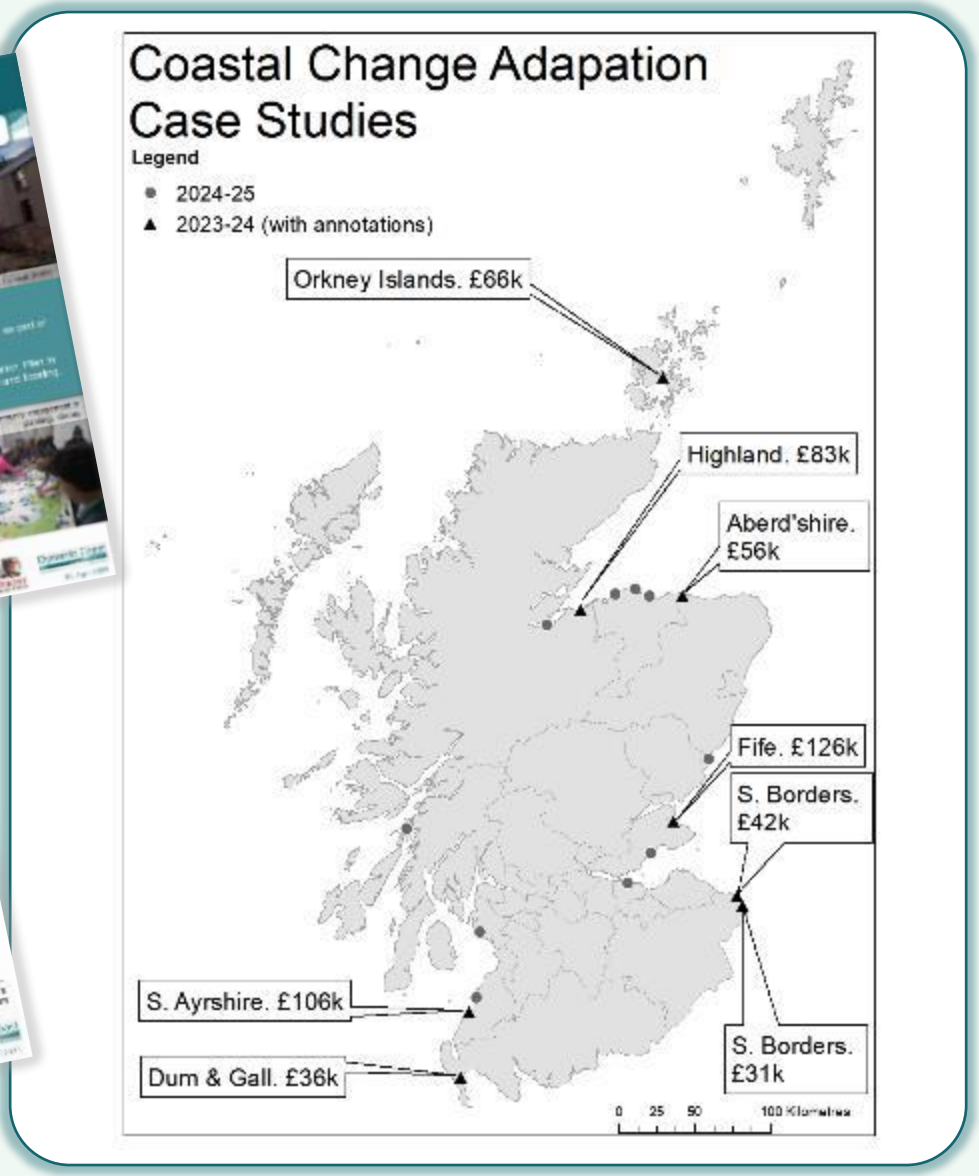
Year 2 Case Studies (2023/24)

So, let's hear from…

1. Lorna Jarvie & Scott Greig (S. Ayrshire)
2. John Lavery (Mott MacDonald / S. Borders)
3. Rick Haynes (Fife)

4 mins each

Not all plain sailing: Fife & Aberdeenshire



South Ayrshire

Lorna Jarvie & Scott Greig

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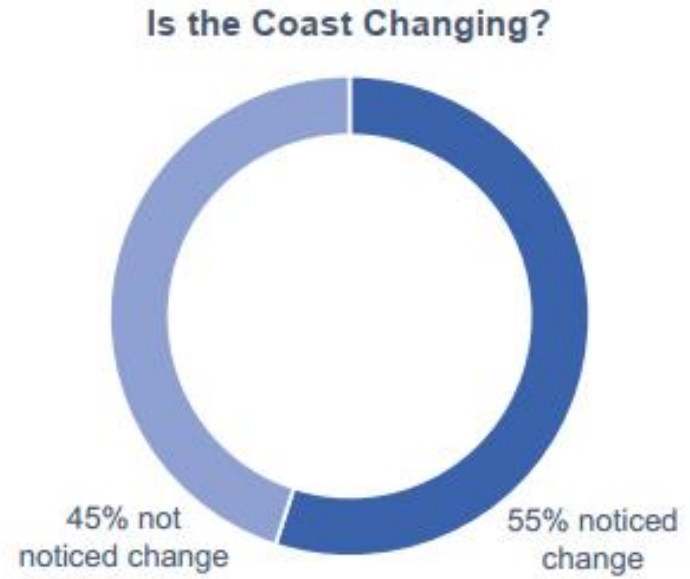
Ballantrae Coastal Change Adaptation Plan

Lessons learnt to date at April 2024

Research / key stages learnings

- Familiarise with Dynamic Coast 2 outputs
- Familiarise with Coastal Change Adaptation Plan Guidance
- Consider / engage with stakeholders
- Get help
- Decide outputs
- revisit / refresh as project evolves



Of the 33 people who have noticed the coast changing, 19 expressed their concerns about this.

"Climate change will affect Ballantrae in the next 20 years."

41 agreed

9 disagreed

"Climate change will affect Ballantrae in the next 50 years."

48 agreed

5 disagreed

Stakeholder engagement

Importance to the Community

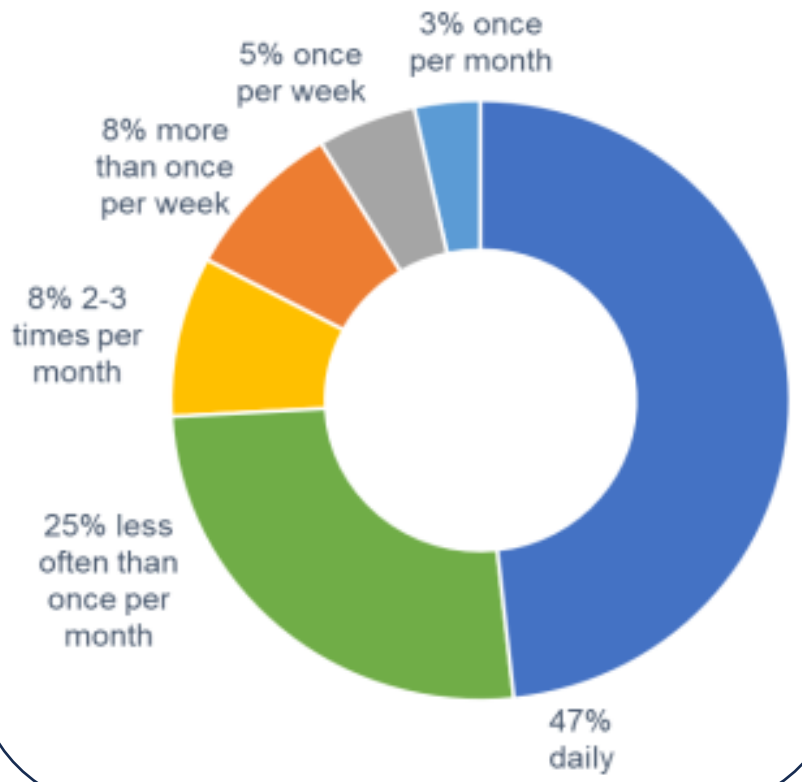
When asked "how important is the beach at Ballantrae to you?"

83% of people said "very important" or "important"

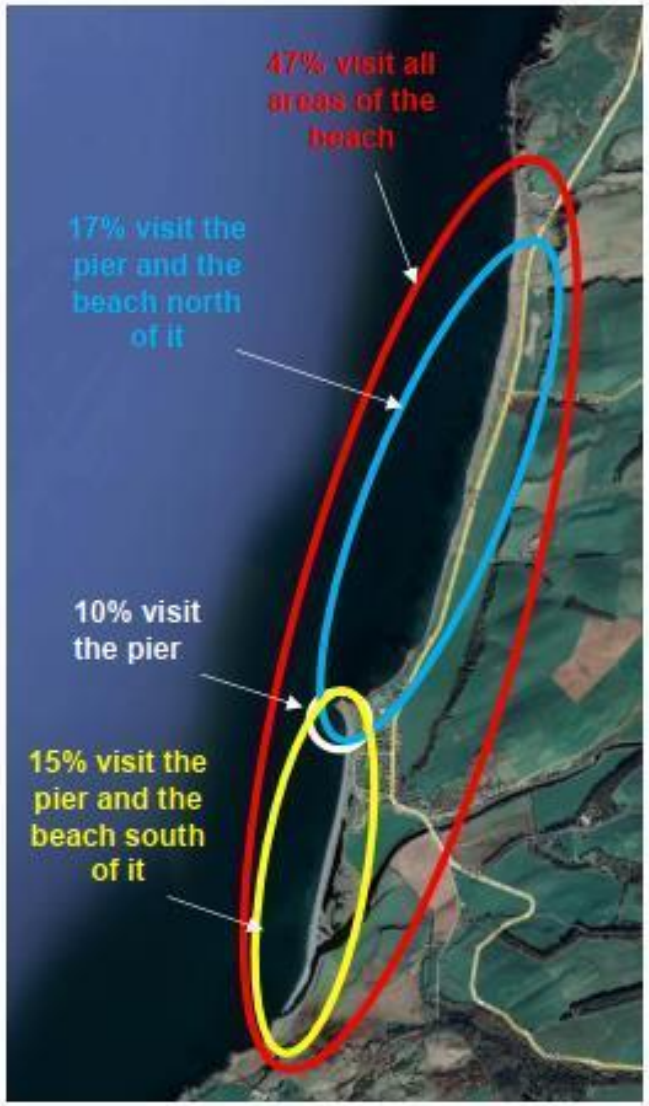
3% of people said "unimportant"

What do you value about living in Ballantrae?

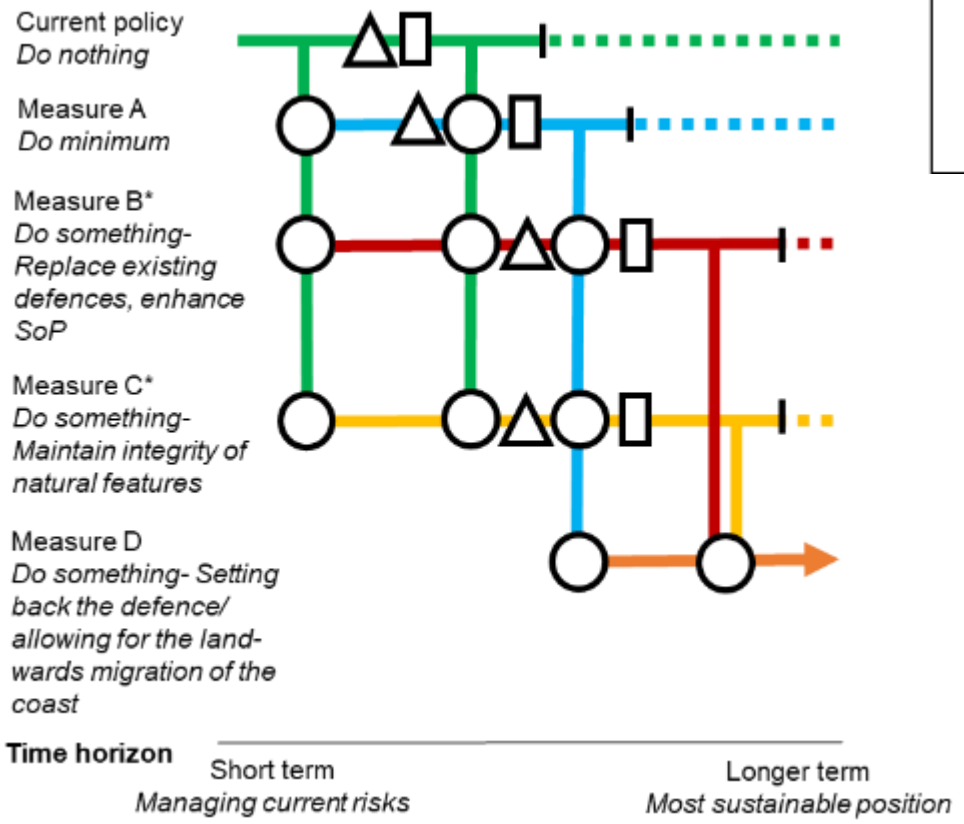
How often do you visit the beach?



Which part of the beach do you visit?



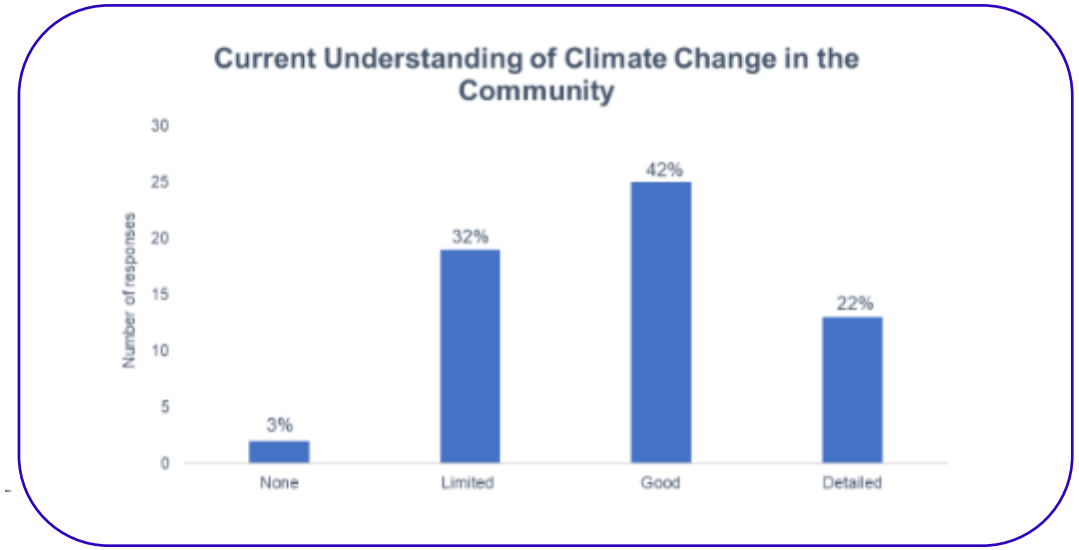
Final thoughts



Scorecard pathway overview:

Pathway:	Costs:	Benefits:
1	0	+
2	£	++
3	£	+++
4	£££	++
5	£££	+++
6	£££	++++
7	£££	+++
8	£	++++
9	££££	++++
10	£££££	++++

Key:
- Transfer station to new measure
- Adaptation signal
- Decision node
- Adaptation tipping point of an action
- Measure effective
- Measure not effective



- Deeper engagement to be achieved
- Monitoring regimes
- Long term planning

Scottish Borders

Victoria Deakin

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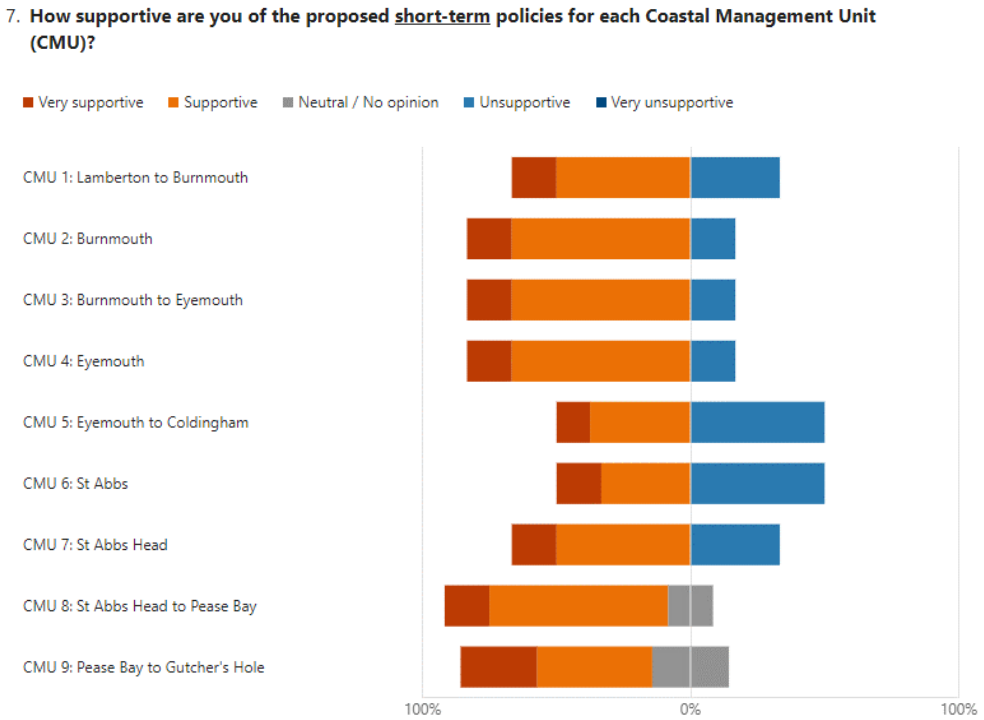
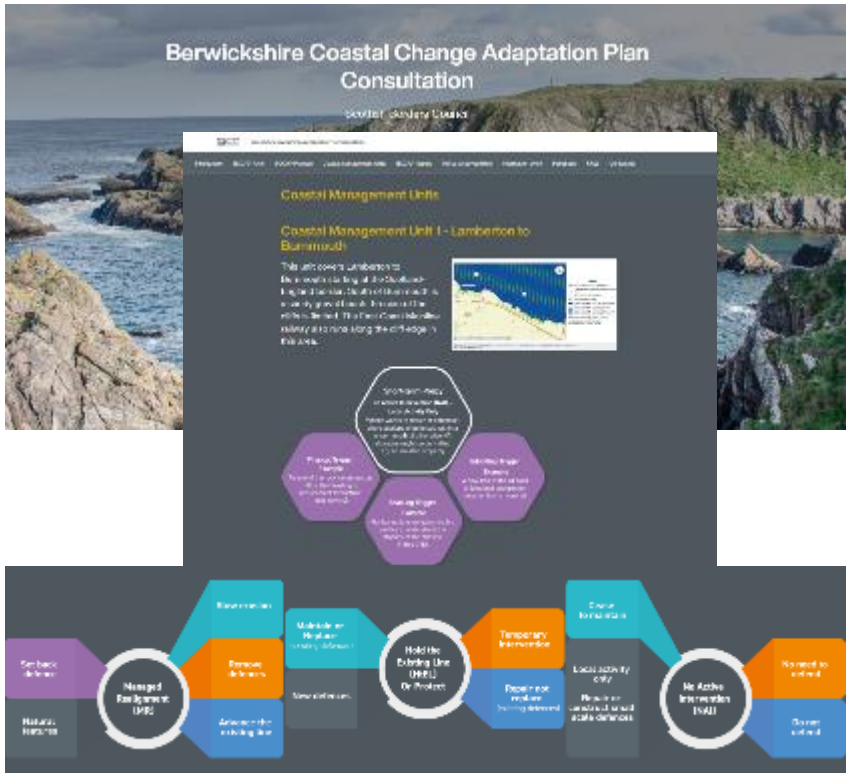
Berwickshire CCAP – Consultation

In coastal communities, like those along the Berwickshire coastline, climate related events (sea level rise, flooding, coastal erosion) could be devastating, leading to isolation from key services and emergency response. The aim of our consultation was to review best practice and identify how to reach appropriate audiences in Scottish Borders.

Berwickshire CCAP - Consultation

The BCCAP should take full account of the potential to involve and engage the community in the process of coastal change and where appropriate create the opportunities for community participation in delivering mitigation and adaptation actions. This level of engagement helps to promote individual and community understanding of climate and environmental change.





Online storymap

In-person event

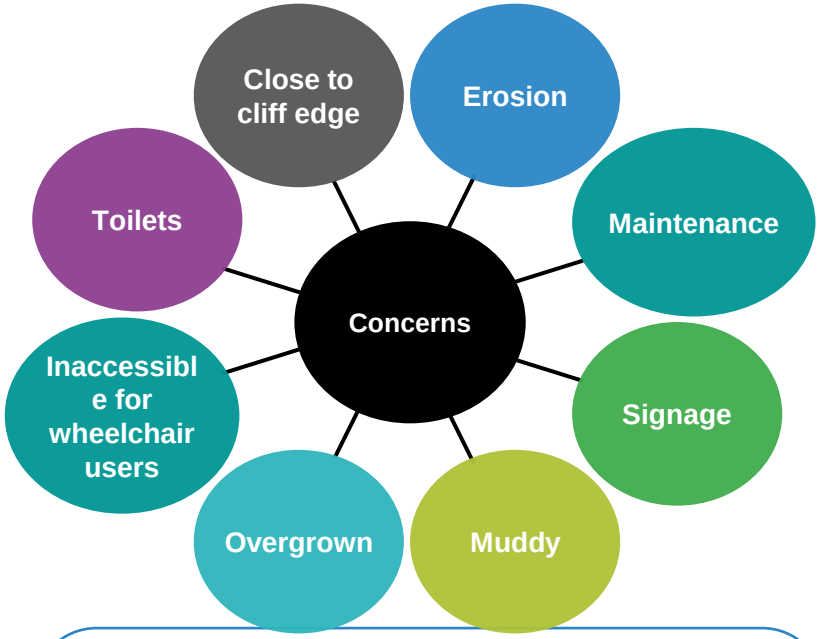
Berwickshire Coastal Path

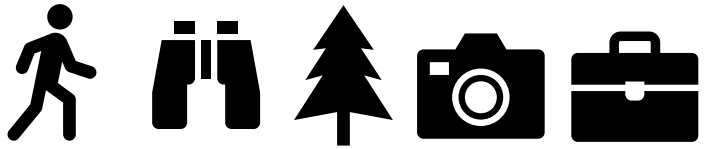
The Berwickshire Coastal Path is a central part of the Berwickshire coastline providing an important local amenity and is a driving force in boosting local tourism. Scottish Borders Council have used funding provided by Scottish Government funding to explore resilience and adaptation options for the Berwickshire Coastal Path.

Mott MacDonald

Scottish Borders COUNCIL

Coastal Path Consultation



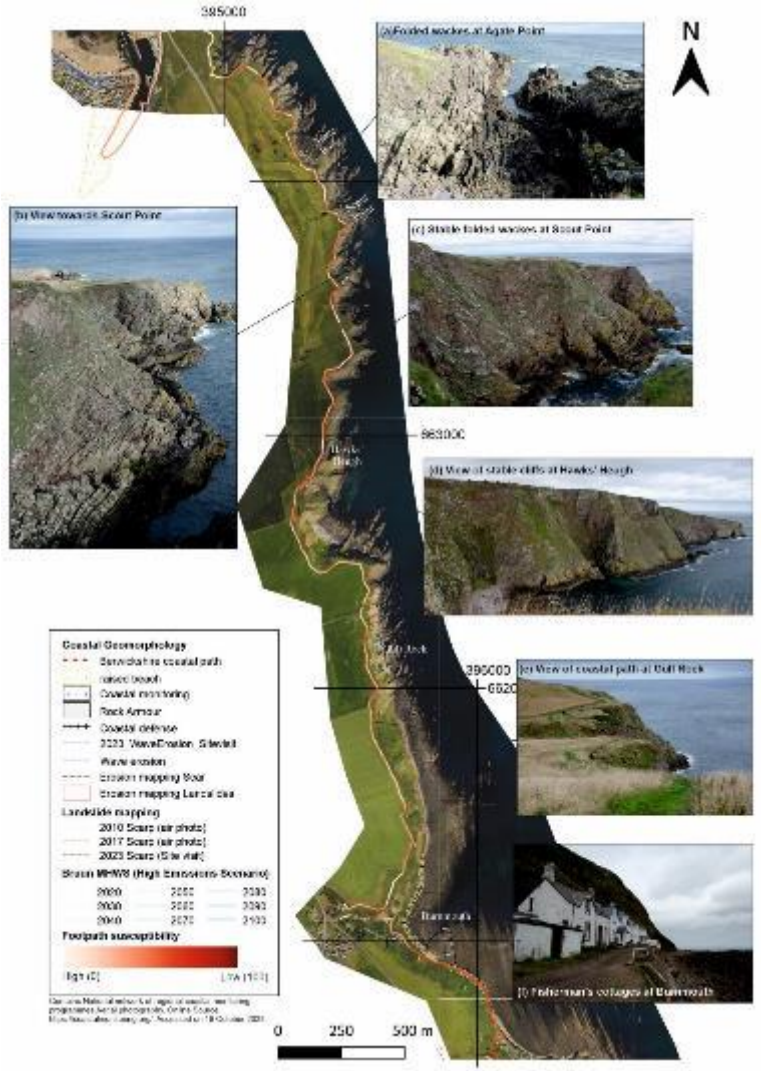


Walking, sightseeing, nature, photography and commuting

Top 5 reasons for path use

334 number of people responded

Coastal Path susceptibility assessment



Coastal Path options

Scottish Borders COUNCIL

Mott MacDonald

Fife

Dr Rick Haynes

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Year 3 Case Studies (2024/25)

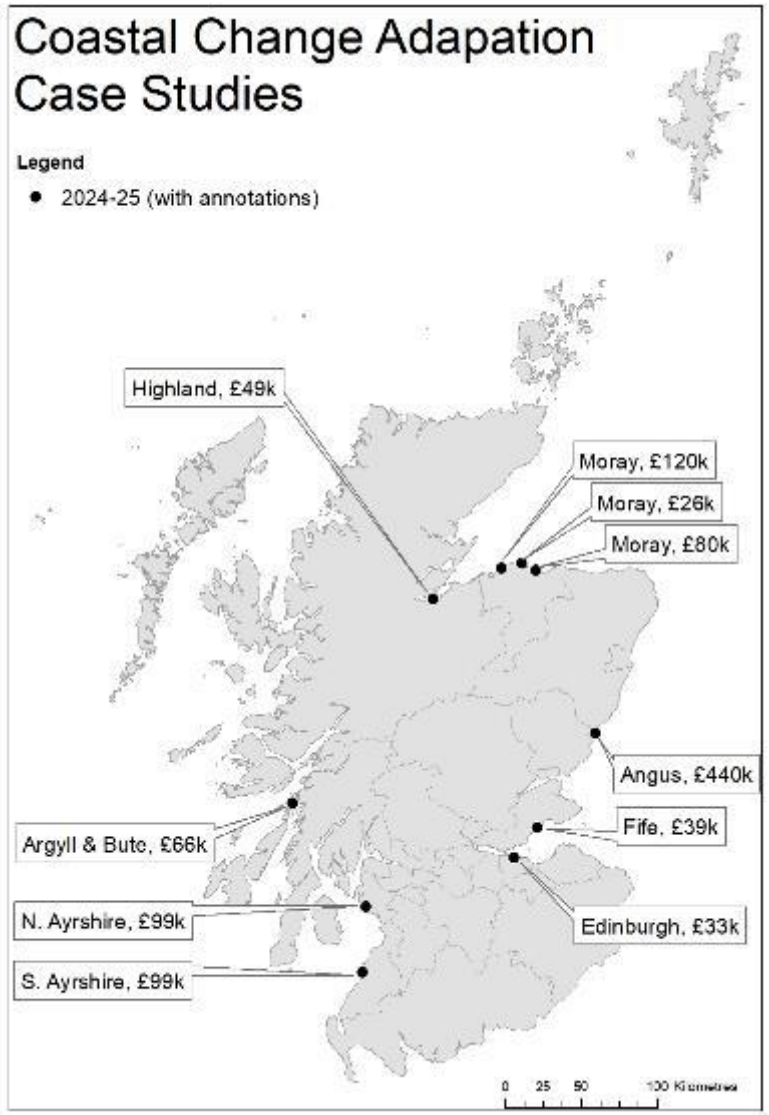
Dynamic Coast
DynamicCoast.com @DynamicCoasts

Next up, for case studies that are just starting

1. Eleanor Doyle (Angus)
2. Colin Buchanan (Isle of Luing)
3. John Lavery (Mott MacDonald / CEC)
4. Amee Scott (Fife)
5. Susan Veitch (Highland)
6. Will Burnish (Moray)
7. Lorna Jarvie & Scott Greig (Ayrshire CCAP)

4 mins each though Will has 6mins

Panel discussion & Q&A



Angus

Eleanor Doyle

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Argyll & Bute

Colin Buchanan & Rob Black

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Cullipool conservation village - Isle of Luing

- Located 16 miles south of Oban off the west coast of Argyll
- Population of 179 and a mixed economy
- One of the Slate Islands and has historic slate quarries
- Our village is built on made ground and our beach is slate spoil

Isle of Luing Community Trust

Argyll Bute COUNCIL

What is our challenge?

- Sea storms will always cause damage
- Sea wall built from slate in 2000
- Damage in 2018 spurred our community to find a solution
- Realisation that Slate production could deliver material to protect the shore
- Funding and managing delivery

Isle of Luing Community Trust

Argyll & Bute COUNCIL

UoG report shows our village is at severe risk

Worst case, do nothing - erosion will continue and made ground will be lost

- By 2060 the bank is eroded to quarry edge
- By 2060 the higher bank is eroded through

Our delivery plan has four phases

1. Repair the worst affected (North) section
2. Repair the South section
3. Rock from setup of slate quarry operations (32,000 cubic metres) to nourish the wider beach
4. Annual and continued beach nourishment with slate spoil from the slate quarry operation

Ongoing monitoring programme to measure changes to the beach and made ground.

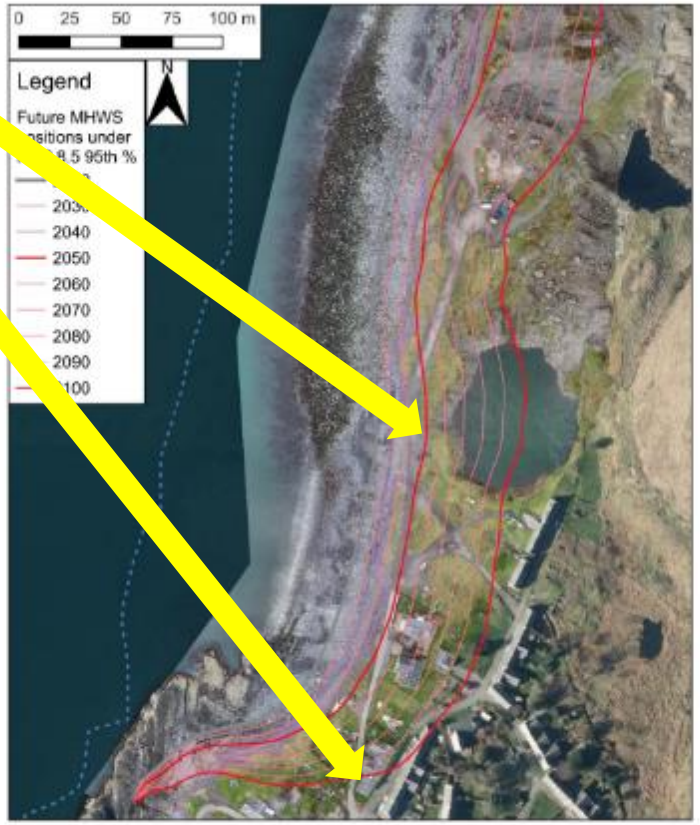


Figure 11: Future positions of MHWS under RCP 8.5 95th percentile scenario, as calculated following the methods of the Dynamic Coast project. MHWS lines are plotted for each decade to 2100. This approach assumes that erosion occurs into unconsolidated substrate and is unabated by any coastal defences.

Isle of Luing Community Trust

Argyll Bute COUNCIL

PHASE 1 - COMPLETED

In 2023 completed Phase 1 with grant assistance from HES and local fund raising

- High cost - Phase 1 = £35k
- Difficult to get suitable contractors
- Used stone recovered from spoil heaps

Dynamic Coast

University of Glasgow

HISTORIC ENVIRONMENT SCOTLAND | ÀRAINNEACHD EACHDRAIDHEIL ALBA

HIE
Highlands and Islands Enterprise
Iomairt na Gàidhealtachd 's nan Eilean

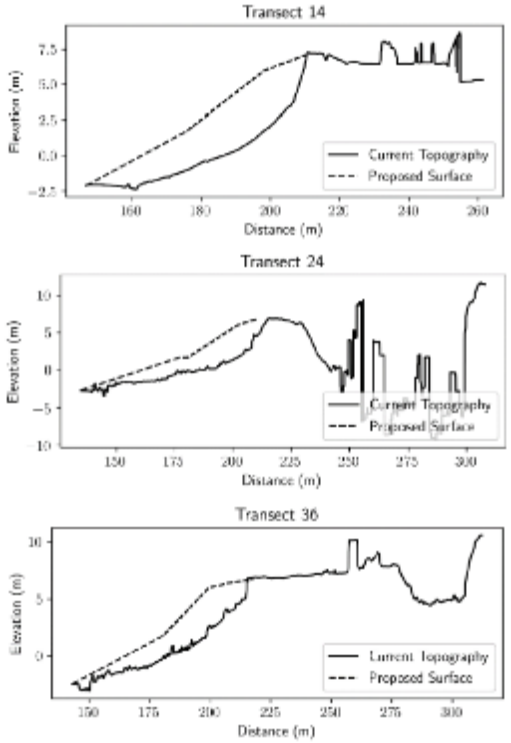
Phase 2 - CCA and Argyll and Bute Council funding will enable delivery in 2024

- The south part of the wall to be rebuilt in summer 2024
- Recover stone from shore and from quarry
- Change the slope of the wall to improve defense
- Place as much stone on beach in front of wall as funding will support
- Recover as much large stone as affordable for beach nourishment

Phase 3 - Ongoing protection – use stone to raise levels back to 1995 state

Figure 9 Transects used for shoreline change analysis. Transects are numbered sequentially from south to north. Transects 14, 24 and 36 highlighted were selected to visualise cross-shore topographic profiles as shown in Figure 10.

- Whole area segmented
- Each segment calculated for amount needed
- Different profiles for each
- Total required is 90,000m^3
- We will deliver 32,000m^3
- Focus is on sections 1 – 27



SLATE ENTERPRISE DESIGN

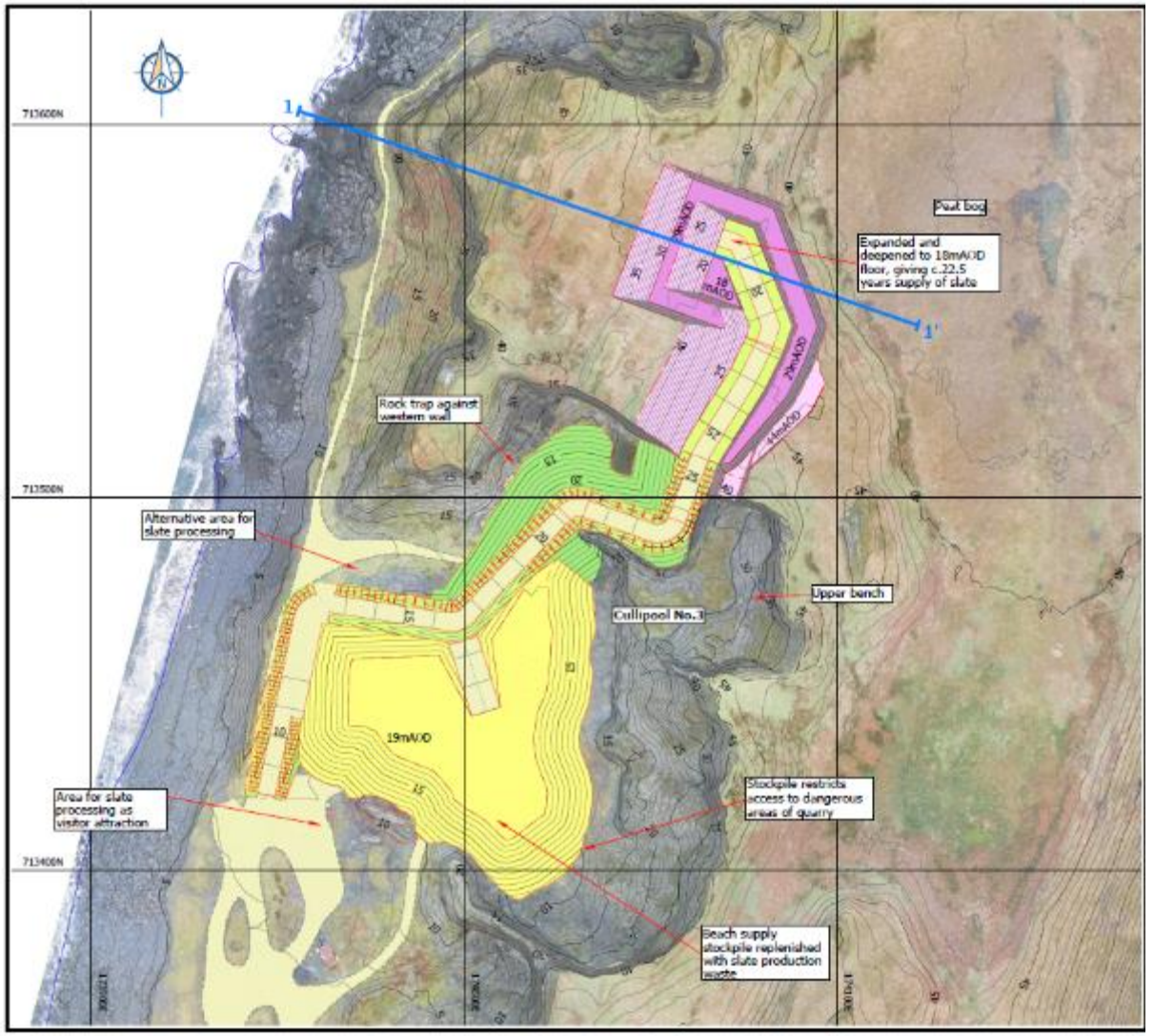
IOLCT Commissioned GWP to undertake a geological mapping and quarry development plan.

Small slate enterprise plan. Quarry moved eastwards and hidden from village after initial review.

Focused on areas from Cullipool no3 quarry up to the North at Port Mary.

25yr forecast production of circa 200 tonnes of finished roofing slate annually.

Initial set up would deal with the coastal erosion issue and then manageable through annual top ups.



Barriers to progress

- **Time and resources**
  - Small communities need a lot of resources just to get a plan together
- **Expertise and knowledge**
  - is hard to identify, expensive and complex to assess
- **Funding**
  - Costs for some solutions for island communities can be unaffordable
  - Engineered solutions can be logistically too complex
  - Private land ownership means limited Council help
- **Contractor availability**
  - Finding a competent contractor with the appropriate schedule window to suit our project
- **Professional services**
  - Identifying and costing in services like QS or Civil Engineers.

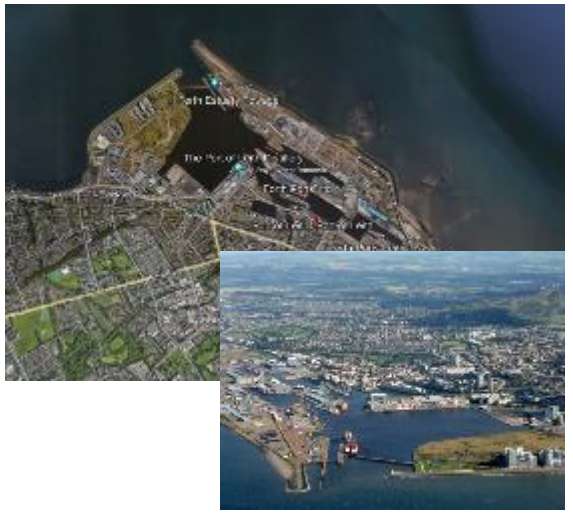
City of Edinburgh

John Lavery

Edinburgh CCAP

Infrastructure Owner Consultation

- The Forth Rail Bridge (Responsible body: Network Rail)
- The Queensferry Crossing and Forth Road Bridge (Responsible body: Forth Bridges Operating Company)



Forth Ports Leith (Responsible Body: Forth Ports Group)

The Seafield Wastewater Treatment Works (Responsible body: Veolia / Scottish Water

Fife

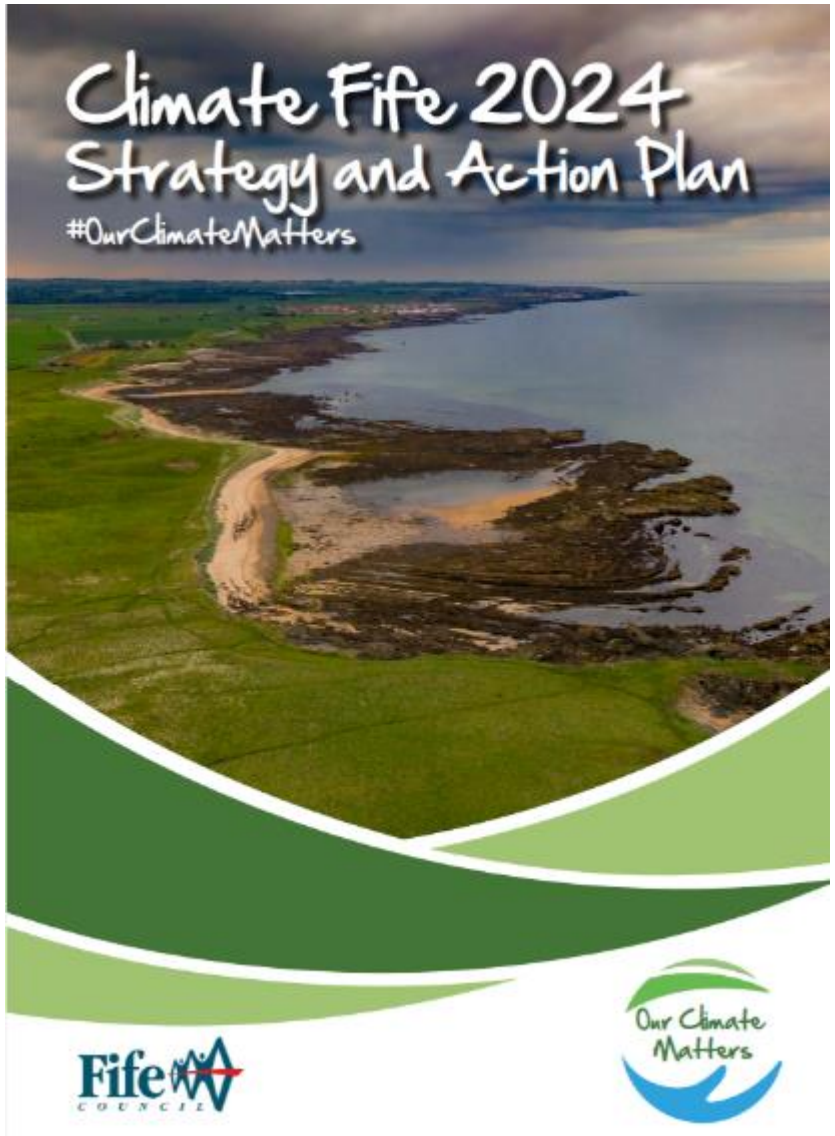
Amee Scott

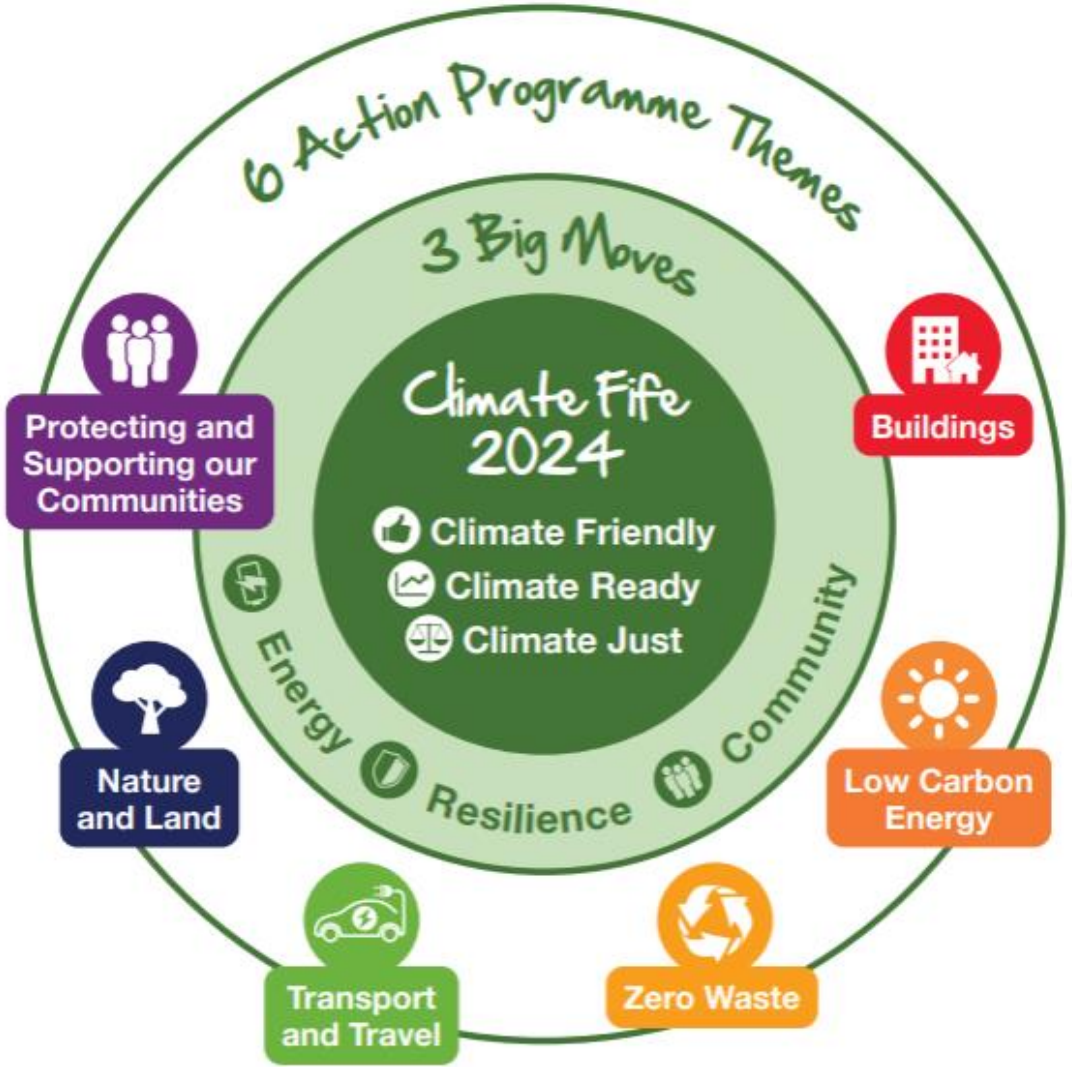
Coastal Impact Management

Amee Scott

Climate Change & Zero Waste Team

Third Coastal Change Adaptation Webinar
Tuesday 16th April 2024


Climate Fife 2024
Strategy and Action Plan
#OurClimateMatters
Fife Council
Our Climate Matters


6 Action Programme Themes
3 Big Moves
Climate Fife 2024
Climate Friendly
Climate Ready
Climate Just
Energy
Resilience
Community
Protecting and Supporting our Communities
Buildings
Nature and Land
Low Carbon Energy
Transport and Travel
Zero Waste

Coastal Impacts in Fife

Picture: Fife Coast and Countryside Trust

Picture: Fife Jammers

Picture: The Scotsman

Picture: The Courier

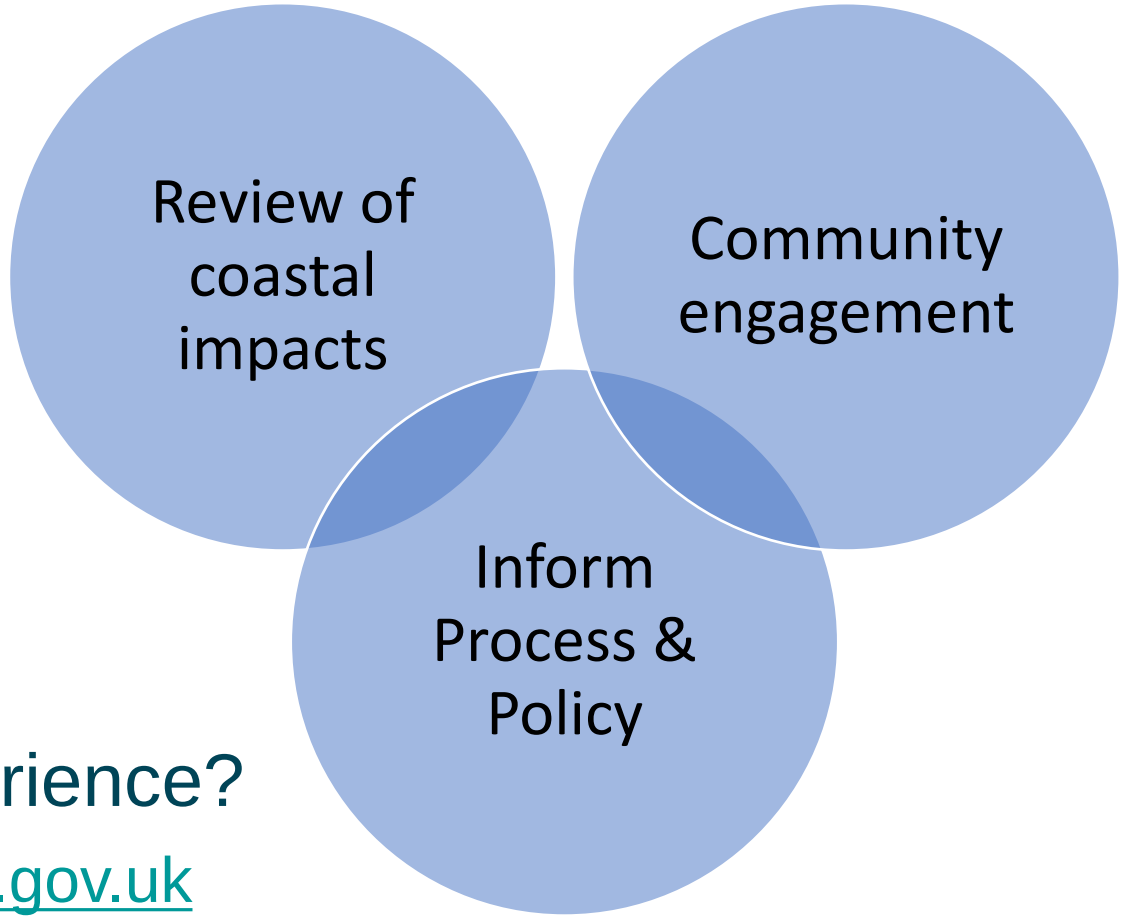
Picture: Fife Jammers

Picture: Dunfermline Press

Coastal Change Adaptation Case Study Aims

Case Study Areas:

- Burntisland/Pettycur Bay
- Kirkcaldy Promenade
- West Weymss



What can we learn from your experience?

- Please get in touch! Amee.Scott@fife.gov.uk

Step by step breakdown

Phase	Objectives
Impact Review	• Identify case study areas and boundaries • Gather community evidence • Expected future impacts
Ownership & Value	• Review land and asset ownership for each site • Legal searches & land registry • Quantify coastal value – economic, health, wellbeing and heritage • Create inputs for LDP2 & Coastal Change Plan
Mandatory Duties	• Identify mandatory duties for coastal impacts
Community Engagement	• Identify appropriate language • Carry out community engagement
Council Process Creation	• Establish a robust council process in response to coastal impacts – projected & reactive

Thanks

- Contact: Amee.Scott@fife.gov.uk

Highland

Susan Veitch

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Relic Defences

Highland Council

The Highland Council
Comhairle na Gàidhealtachd

Highland Council Area

- Coastline
  - Approx 4,905 km of coastline at low water
  - Approx. 1, 900 km at high water
  - 49% of Scotland's Coastline
  - Most of Highland Population

Where Are We?

- Very early stages
- What is a relict defence?
- Identify 2 locations
  - Receptors
- What will adaptation look like?
  - Monitoring
  - Repair
  - Abandonment

The Highland Council
Comhairle na Gàidhealtachd

Community Preparedness

- How do we communicate risk/responsibility
- Community involvement in decisions
- Community choice vs practicalities
  - Cost vs Benefit
  - Only access in

Moray

Will Burnish

Monitoring Moray Coastline

April ‘24 to March ‘25

£28,000

Moray Council

Lossiemouth East Beach ©Moray Council (2023)

Overview: Our project aims to create a network of photographic monitoring points along the Moray coastline. These points will allow the community to upload photos of coastal change from the same viewpoint. These photos will be uploaded to CoastalSnap allowing access for all to monitor the change, This information will be used to inform Moray Council's Coastal Adaptation Plans.

Near-Real Time Coastal Resilience Modelling

April ‘24 to March ‘25

£120,000

Moray Council

Bow Fiddle ©Moray Council 2023)

Overview: This project will deliver a near real-time approach to quantify coastal resilience through continuous monitoring. The aim of the study is to use satellite imagery and drone photographs to predict the changed. This improved and continuously updating record would allow both long-term trends and the impact of individual storms to be quantified.

The Scottish Government
Riaghaltas na h-Alba

Dynamic Coast

Natural Restoration of Kingston Coastline

April ‘24 to March ‘25

£80,000

Moray Council

Overview: The purpose of this project is to assist in the recharge of shingle along the west beach at Kingston. The recharge is to be designed to act as a feed of shingle while erosions take place. It is anticipated that this would reduce the rate of erosion and provide needed shingle to the SSSI/SAC without using imported material from outwith of the sediment catchment.

The Scottish Government
Riaghaltas na h-Alba

Dynamic Coast

North & South Ayrshire

Lorna Jarvie & Scott Greig

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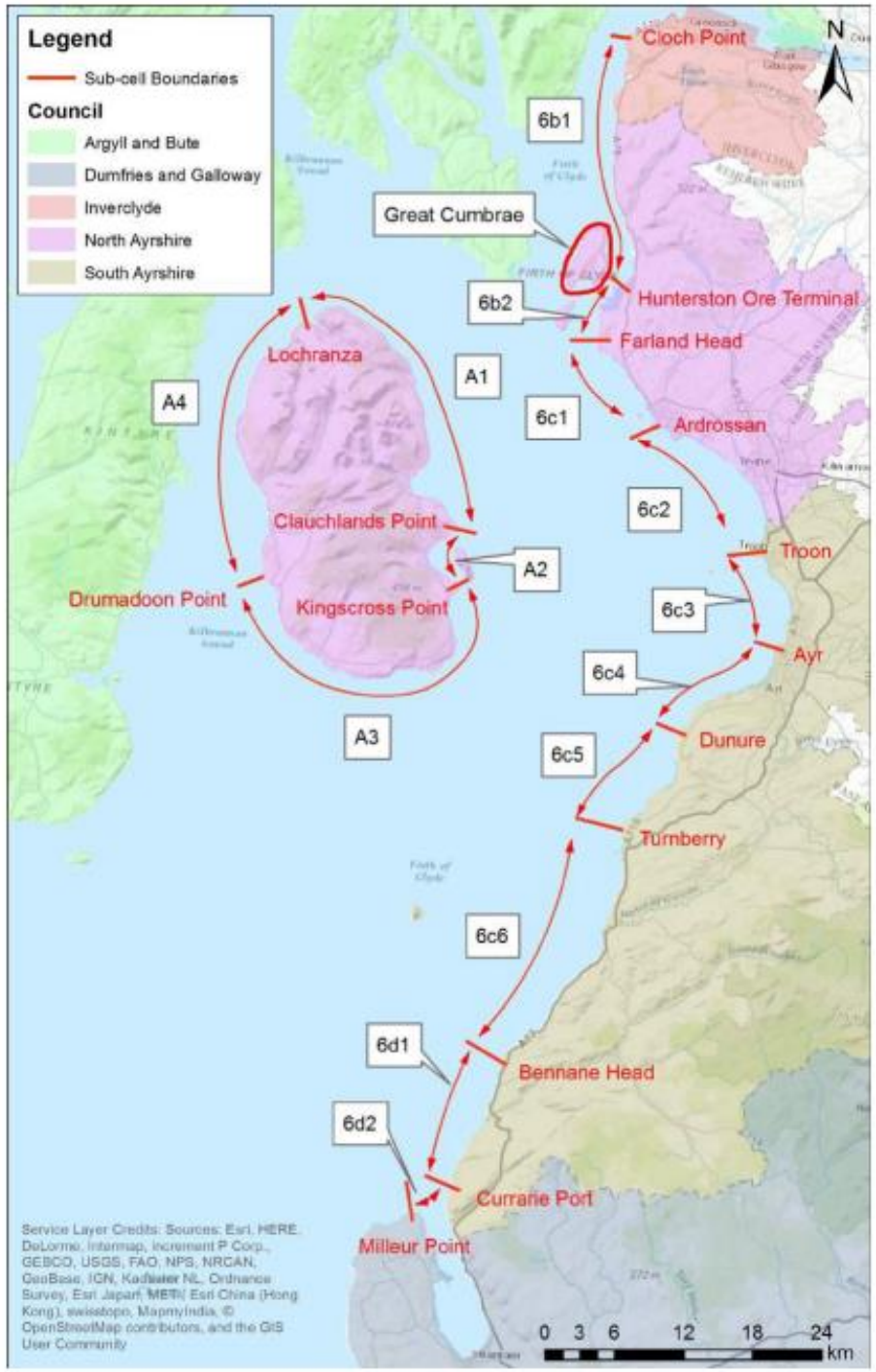
Ayrshire Coastal Change Adaptation Plan

Initial Stages

Ayrshire CCAP

Map shows area to be included with sub-cell boundaries marked (taken from from 2019 SMP)



What we are planning to achieve

The Ayrshire CCAP will –

- Update models
- Identify policies
- Focus on at risk areas
- Involve stakeholders.
- Develop resources

What we are planning to achieve

- Improve management and decision making
- Scoping and procurement
- Planning, monitoring
- and early responses

Why is the project being undertaken now?

- Lessons learnt
- short comings of the existing SMP
- Embed CCAP Guidance (2023)
- Focus on engagement

Panel discussion / Q&A

14:00-14:55

Crovie
Credit: Dynamic Coast

Panel discussion

- What do you wish you had known at the start of your project, that you know now?
- What are the blockers / obstacles to progress?
- What is essential to achieving success?
- If you could change one thing to help Scotland adapt to coastal change, what would it be?
- Open questions from the floor

Thanks to our speakers

Tracy.Mcken@gov.scot
Alistair.Rennie@nature.scot
Lorna.Jarvie@south-ayrshire.gov.uk
Scott.Greig@ayrshireroadsalliance.org
Colin Buchanan colin@isleofluing.org
John.Lavery@mottmac.com
Amee.Scott@fife.gov.uk
Susan.Veitch@highland.gov.uk
Will.Burnish@moray.gov.uk

- Video of the presentations will be available shortly on the Sniffer website and Vimeo
- Pdf copies of presentations & links to the videos will be emailed to attendees

Coastal change adaptation guidance and case studies available here
https://www.dynamiccoast.com/cca

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Thank you

Skara Brae
Credit: Dynamic Coast

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