July 2022

Resilience of Coastal Communities

ROCC Project Overview

The Resilience of Coastal Communities (ROCC) project

From fisheries to tourism to renewable energy, industries and individuals who rely on marine resources make up the social and economic fabric of coastal communities across the UK. Increasingly, these communities are threatened by risks such as climate change, the COVID-19 pandemic and Brexit: changes that have potential knock-on effects for the wellbeing of coastal communities and the sustainable use of marine resources. The Resilience of Coastal Communities (ROCC) project will work closely with coastal communities, as well as other practitioners and policy-makers, to identify how communities can **build resilience to better deal with these threats,** while also improving their **wellbeing or quality of life** and the **health of the marine environment** they depend upon.

ROCC will develop a 'nexus approach' to carefully consider the close relationships between resilience, human wellbeing and environmental sustainability, and to explore ways for solutions targeting one of these goals to also explicitly consider the other two. In doing this, marine policy and management can support thriving coastal communities able to respond effectively to the changes and risks they face, and to use marine resources sustainably.

What is our 'nexus approach'?

Coastal communities and their marine environments are inherently connected, and together they need to respond to a diverse range of threats - from climate change to political and regulatory change and crises. Our 'nexus approach' to marine management recognises that the resilience of individuals, families and communities is closely linked to their wellbeing and their impact on the marine environment. With a nexus approach solutions can, in principle, improve all of these outcomes together.

A nexus approach also recognises trade-offs – where a solution that enhances one aspect of the nexus has the potential to impede another. Adopting our 'nexus approach' means taking potential synergies and trade-offs between resilience, wellbeing and environmental sustainability into account in marine management decisions.

Only by doing this, can marine policy and management be **designed to benefit both coastal communities and the marine environment, with greater capacity to withstand current and future challenges.**

THE RESILIENCE NEXUS

The 'nexus approach' to marine management recognises that the resilience of individuals, families and communities is interwoven with their wellbeing and their impact on the marine environment.

Building new understanding of solutions to marine management that improve resilience, wellbeing and sustainability, the nexus approach provides tools to incorporate synergies and trade-offs in decision-making.

By adopting the nexus approach, future marine policy and management can be designed to benefit both coastal communities and the marine environment, with greater capacity to adapt to current and future challenges.

FRAGMENTED AND FRAYED

In the **past**, marine management considered the wellbeing and resilience of coastal communities, and the sustainability of marine environments as separate strands of policy, with little attention paid to how they interact and affect each other (+/-).

TURNING TO TRADE-OFFS

In the **present**, we understand that the wellbeing of communities and marine sustainability are intricately woven together. There is some recognition of trade-offs, where an improvement in one element can negatively impact another. Resilience of communities to change is an emerging but distinct priority.

WEAVING A WAY FORWARD

In the **future**, it is vital to recognise that any one of these three strands of policy may positively (+) or negatively (-) intersect with the other strands. Marine policy that promotes synergies and addresses trade-offs strengthens the ability of communities to respond to future challenges.

Why is a nexus approach important?

Marine investment, policy and management are often viewed as prioritisation decisions between different outcomes. However, they can also involve so-called 'trade-offs' where decisions may benefit some groups or objectives at the expense of others. These trade-offs can be acceptable to some people, but not to others, resulting in the potential for conflict. Understanding and addressing the acceptability of trade-offs for different groups is important for developing policies and investments that are **effective, fair** and **long-lasting**. Such (trade-off) decisions may include those around marine plans, fisheries regulations, heritage investments, protected area designations and offshore wind farms.

Research has typically focused on understanding the trade-offs between different environmental objectives, between different sectors, or between conservation and economic benefits, with little attention paid to the resilience and wellbeing of coastal communities. Despite this, emerging research shows that there can be significant trade-offs between resilience and wellbeing, and between resilience and environmental sustainability. For example, people can be doing well but struggle to respond effectively to adversity, while businesses can build resilience to deal with change, but at the expense of the marine environment.

ROCC's nexus approach will allow researchers, decision-makers and coastal communities to evaluate the trade-offs between resilience, wellbeing and sustainability across sectors and scales. ROCC will apply the nexus approach to both policy and on-the-ground decisions, and identify opportunities to improve all three outcomes in coastal communities. The project's key objectives are to:

1. **Develop a new nexus approach** to evaluate the links and trade-offs between resilience, wellbeing and sustainability.
2. **Develop a decision-making framework** that can be used to tackle difficult nexus trade-off decisions.
3. **Apply the nexus approach** to current and future interventions on the ground and in policy to improve their potential to enhance resilience, wellbeing and sustainability.

The main project aim of ROCC is to produce a low-tech framework and evidence that a new nexus approach to marine decision-making can improve the lives of marine resource-users and enhance the sustainable use of marine resources, including through times of crisis.

The project is organised into three research themes: **present**, **past**, and **future**.

Research Theme 1
Present Nexus Dynamics

Leads: Rachel Turner and Steve Simpson

This research theme aims to explore how coastal communities build resilience to emerging threats and a rapidly changing world, and to **understand the trade-offs that they experience between being resilient, being well and improving environmental sustainability**. We will explore the factors that influence the ability of communities to respond to threats and change. We will also examine how existing marine initiatives and policies improve synergies between, and cause trade-offs amongst, the nexus elements. In doing so, this research will identify where unacceptable or unanticipated trade-offs occur, and how interventions can be adapted or revised to improve the resilience and wellbeing of communities alongside the sustainable use of marine resources.

We ask:

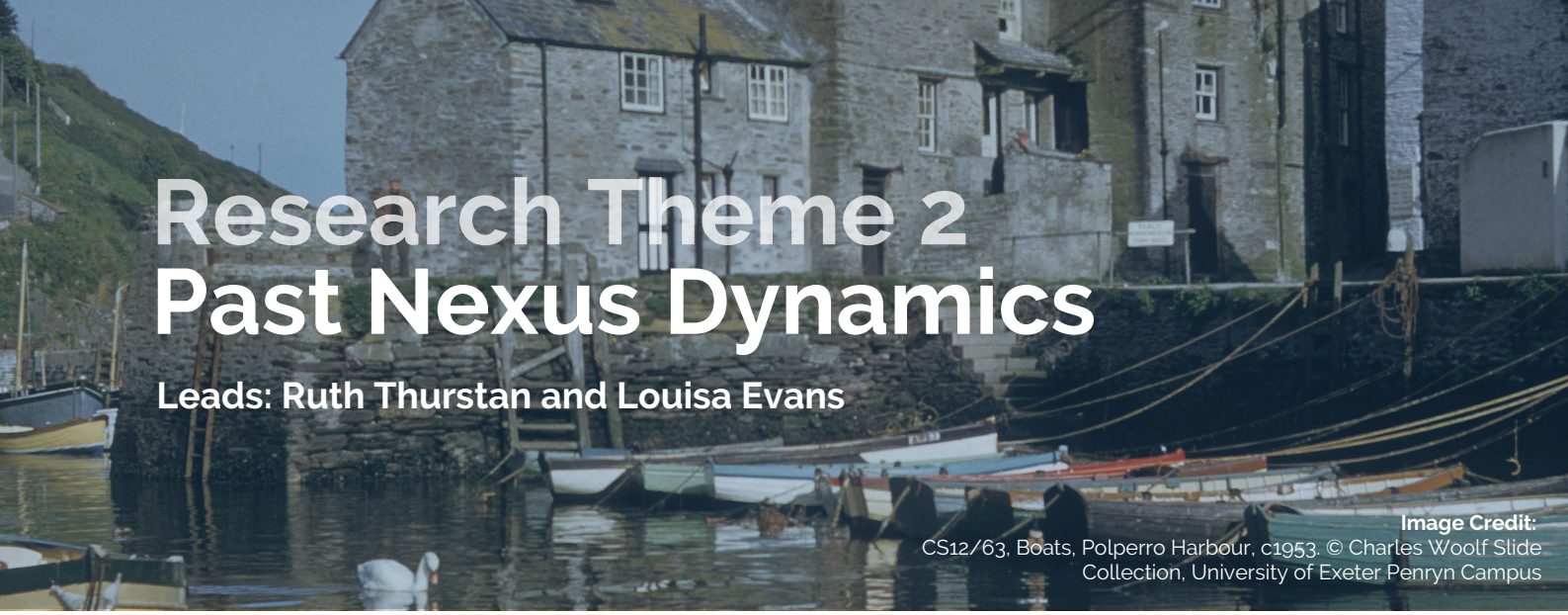
- How do coastal communities respond to changes in the climate and environment, in regulation and in their social fabric?
- How do coastal communities currently enhance their resilience to such threats and changes, and how does this impact their wellbeing and use of marine resources?
- How do existing marine initiatives and policies enhance or trade-off community resilience, wellbeing and sustainable management of UK marine resources, and how can this be improved?

To answer these questions, we will:

- Create an interactive, open-access map of current research into how resilience, wellbeing and sustainability interact in UK coastal communities.
- Survey and interview community members at focal sites in the Southwest to identify the existing interactions within the nexus.
- Hold in-depth workshops with practitioners and policy-makers to better understand how a nexus approach can improve the potential of existing marine initiatives and policies to build resilience, enhance wellbeing and contribute to sustainable marine use.

Outputs:

- An 'evidence map' showing hotspots of, and gaps in, the UK's marine and coastal research on resilience, wellbeing and sustainability.
- New analysis on how to build the resilience of coastal communities to current and future threats and change, and the implications of this for human wellbeing and sustainable use of marine resources.
- A project brief showcasing how the nexus approach can inform the design of future initiatives for conservation and sustainable development.



Research Theme 2
Past Nexus Dynamics

Leads: Ruth Thurstan and Louisa Evans

Image Credit:
CS12/63, Boats, Polperro Harbour, c1953. © Charles Woolf Slide Collection, University of Exeter Penryn Campus

This research theme will assess how coastal communities have responded to threats and change over the past 50 years, with a view to **establishing how the past may influence present-day responses**. Working closely with organisations in the heritage sector, we will also explore how decision-making in natural and cultural heritage can mutually enhance community resilience, wellbeing and sustainability.

We ask:

- How do past responses to threats and change influence the current resilience and wellbeing of coastal communities, and their sustainable use of marine resources?
- What do coastal communities currently consider important to their resilience, wellbeing and marine environment that might be lost or significantly changed in the future? What are their priorities for heritage investments?
- How can the priorities of diverse community groups better inform investment and policy decisions in the natural and cultural heritage sector?

To answer these questions, we will:

- Work in collaboration with the Historic Environment Teams at Cornwall and Devon Councils to understand heritage policy and decision-making.
- Compile materials from archives, museums and libraries to explore lessons from historical change events in coastal communities in the Southwest.
- Collect stories across generations of community members to explore past responses to change, and how these responses affected their wellbeing and marine sustainability.
- Hold a workshop with community members, local authorities, and heritage organisations to explore how heritage policies and investments can contribute to enhancing the resilience and wellbeing of communities, and their sustainable use of marine resources.

Outputs:

- A database of available archival material and new evidence of how focal communities in the Southwest responded to change in the past and built resilience to future change.
- High-quality audio from oral histories and archival work made available to community organisations to support their work in developing heritage outputs.
- A policy brief highlighting opportunities to integrate the priorities of different communities into natural and cultural heritage decision-making.

Research Theme 3
Future Nexus Dynamics

Leads: Tomas Chaigneau and Matthew Witt

This research theme will develop new tools to explore the potential synergies and trade-offs in the nexus that result from **planned policy and management measures implemented under future threats and change.** The research will catalogue and analyse how trade-offs are made in existing marine policy and planning approaches, and collate potential scenarios of change facing UK coastal communities. Underpinned by data from the Ocean Health Index+, a user-friendly decision framework – Marine Planning Trade-off Analysis+ (MaPTA+) – will be developed. The aim of MaPTA+ is to actively engage policy-makers in identifying and assessing the acceptability of trade-offs between resilience, wellbeing, and sustainability that might result from future marine policy and management in the Southwest and wider UK.

We ask:

- What future scenarios of change and disturbance are coastal communities going to face?
- What are the strengths, weaknesses and gaps in existing tools and approaches used for making trade-off decisions in UK policy and management?
- How can a participatory approach improve the acceptability, fairness and effectiveness of marine trade-off decisions under future scenarios of change?

To answer these questions, we will:

- Work in collaboration with the Marine Management Organisation (MMO) to understand marine policy and decision-making.
- Conduct interviews with policy-makers to assess current approaches used for trade-off decision-making.
- Collate future scenarios of change in coastal communities in the Southwest.
- Collaboratively develop the MaPTA+ tool and trial it in policy workshops. Assess its potential to improve the acceptability of proposed marine policy and management decisions.

Outputs:

- A data discovery tool that signposts available data on future scenarios of change for UK coastal communities.
- An inventory of current trade-off decision-making tools and approaches used in the UK, and the knowledge-gaps within them.
- A new trade-off analysis framework (MaPTA+) to support marine policy and management decision-making.

Glossary:

- **Human resilience** is the ability of an individual, group or community to respond positively to disturbance or change. This may be the ability to absorb disturbance, to adapt and re-organise while undergoing change, or to transform to a new set of functions, values and identities.
- **Human wellbeing** is the ability of an individual, group or community to satisfy their human needs and achieve a state of being well, physically and mentally. Wellbeing includes the material, relational and subjective elements of what it means to live well.
- In this research, **environmental sustainability** refers to both the health or state of the environment in the context of being an environment that can sustain itself into the future, and the human actions that impact the health of the environment.

The ROCC project is led by an interdisciplinary team of researchers and partners drawn from the University of Exeter, University of Bristol, Plymouth Marine Laboratory, Devon Maritime Forum, Cornwall Rural Community Charity, Sole of Discretion, Cornwall Council's Strategic Historic Environment team, and the Marine Management Organisation.

For more information on the ROCC project, please contact:

Louisa Evans, **Principal Investigator**
Louisa.evans@exeter.ac.uk

SMMR Sustainable Management of UK Marine Resources

Natural Environment Research Council

Economic and Social Research Council