

# MORECAMBE BAY

## A NEW APPROACH FOR FISHERIES MANAGEMENT

### COCKLE FISHERIES MANAGEMENT

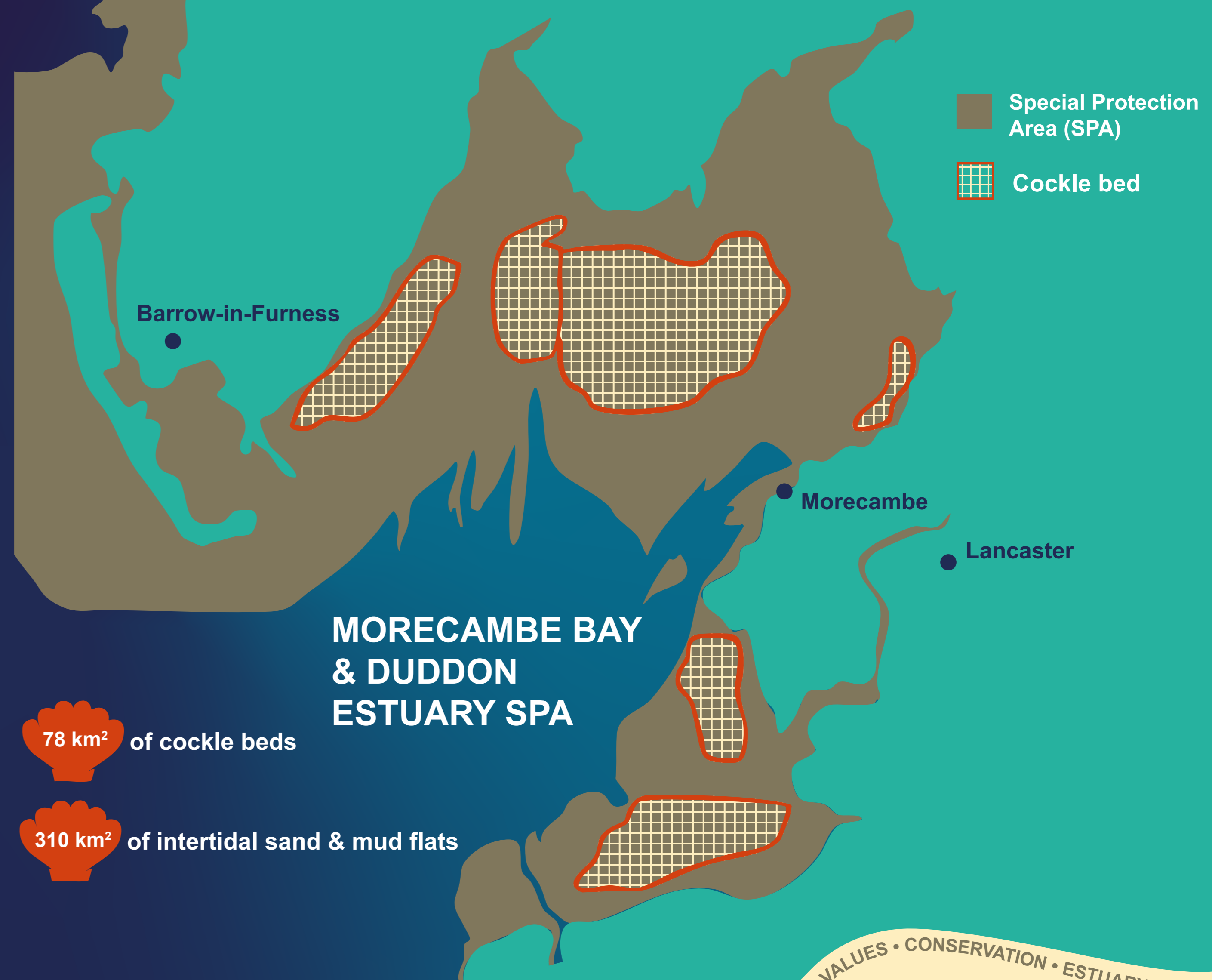
Natural England has been working with the North Western (NW) IFCA to explore how a natural capital approach can help develop equitable and adaptive management of the cockle fishery to support a healthy estuarine ecosystem for nature and the coastal community.

To manage the Morecambe Bay shellfishery sustainably, the NW IFCA assigns regulated access to the cockle and mussel beds under the Permit to Fish for Cockle and Mussels Byelaw. Applying a natural capital and ecosystem approach by incorporating new ecological sampling and insights from social science research will better evidence the environmental, social, and economic benefits of the fishery and trade-offs in the decision-making process.

Natural England's work under the marine Natural Capital and Ecosystem Assessment (mNCEA) programme has been to deliver evidence, tools, and guidance to enable the practical use of natural capital approaches in supporting recovery in marine and coastal environments. Natural capital approaches can facilitate management which considers the social, environmental, and economic impacts of decision-making.

In collaboration with the Association of Inshore Fisheries and Conservation Authorities (IFCAs), Natural England's work under the mNCEA programme is supporting local shellfisheries management which puts a thriving marine environment at the heart of decision-making for Morecambe Bay.

Follow the oystercatcher's footsteps to find out more about what we are doing to help...



### COCKLE CYCLES AND CLOSURES

Cockle beds and the wider mud and sand flats are a dynamic living system, and the Morecambe Bay cockles follow a varying 'boom and bust' cycle, leading to intermittent closure and re-opening of the fishery. For local authorities like the NW IFCA, the challenge is to predict trends in cockle biomass and inform management of the fishery.



In 2024 the Morecambe Bay cockle fishery reopened!

### ECOSYSTEM PRESSURES

Beyond fishing, intertidal ecosystems are under threat from several other pressures including water quality and plastic pollution, and climate change.

### WHAT IS A NATURAL CAPITAL APPROACH?

A natural capital approach considers the intrinsic and monetary value of the environment. It considers the ecosystem as a whole and recognises that a healthy functioning ecosystem supports human health, wealth, and wellbeing; and that the economy, society, and natural world are inextricably linked.

### MARINE NATURAL CAPITAL BEST PRACTICE GUIDANCE

Natural England's best practice guidance for undertaking marine natural capital assessments has provided the framework for understanding the different types of evidence that can support management of marine areas.

In the context of shellfisheries management in Morecambe Bay, this included:

- Collecting ecological evidence
- Using this in ecosystem modelling e.g. Bird Food Model
- Integrating social and cultural values

### MORECAMBE BAY BIRD FOOD MODEL

Morecambe Bay and the Duddon Estuary SPA is an important overwintering site for wading birds such as oystercatcher and knot.

The mNCEA Bird Food Model assesses the effects of shellfishing and other factors on intertidal food availability, and consequently on bird survival.

Model inputs include:

- Shellfish stock assessments
- Intertidal invertebrate surveys
- Bird ecological data: feeding patterns, & oystercatcher & knot abundance

### PARTICIPANT RESPONSES TO CHANGES IN THE COCKLE FISHERY

The 'Cultural Values' research also explores change events related to the fishery and participant experiences of them. This has revealed:

- Concerns about family succession & maintaining local cockling traditions
- The importance of local knowledge, particularly for practicing safe cockling
- Variation in how cocklers have responded to unpredictable cockle cycles & changes in markets & regulation

### SHELLFISHERIES: LOCAL AND NATIONAL SCALES

A natural capital approach can be used to determine a more complete value of shellfish beds. The evidence collected is being used to support local fishery management decisions and the development of national Fisheries Management Plans (FMPs).

Shellfish beds provide multiple benefits, including:

- Provisioning of food & fisheries
- Regulation of water quality & coastline protection
- Cultural heritage & recreational value

The approaches used for the Morecambe Bay and Duddon Estuary SPA can be scaled up to other estuarine sites and related ecosystems.

### NEW ECOSYSTEM EVIDENCE

Natural England's mNCEA work has built a new evidence base on the habitats and features of Morecambe Bay, including the marine invertebrate species living in the intertidal sands.

The new ecological evidence is helping to answer the question of how dependent the healthy functioning of the Morecambe Bay ecosystem is on the benthic species living between its tides. This new evidence, alongside the programme's Bird Food Model, will inform site management and the drafting of the cockle FMP.

### THE CULTURAL VALUES OF THE MORECAMBE BAY COCKLE FISHERY

Researchers from the Universities of Exeter and Southampton are conducting analysis of oral histories to understand community values related to cockling and the Bay.

Emerging insights on what was valued include:

- Safety & local knowledge
- Pleasure of cockling & the economic benefits
- Family & community fishing heritage, & its role in identity

### WHAT DOES IT ALL ADD UP TO?

- New ecosystem data which can be integrated into cockle fishery decision-making
- An enhanced understanding of the true 'value' of estuarine ecosystems & shellfisheries
- Integration of local knowledge & social values
- New evidence on the impacts of decision-making

### MORECAMBE'S HAND-GATHERING HERITAGE

Morecambe Bay has a rich cultural heritage associated with its cockle fishery. The cockles are harvested via a highly selective hand-gathering method. By using a traditional mesh tool the fishers 'riddle' the cockles, which allows undersized cockles to be returned to the bed.

The Morecambe Bay and Duddon Estuary SPA is the most important site in Britain for oystercatchers, carefully considered management can help support the overall population of these charismatic coastal birds!

