

An underwater photograph of a vibrant coral reef. The water is clear and blue, filled with numerous small, dark fish swimming in various directions. The coral is diverse, featuring large, flat, brain-like structures and branching, staghorn-like formations. The lighting is bright, highlighting the textures and colors of the marine life.

# No Net Loss and Net Gain in the Marine Context

Alison Curtis, MSc, MCIEEM  
AECOM

March, 27, 2019

# Habitats in the marine environment



Marine Environment

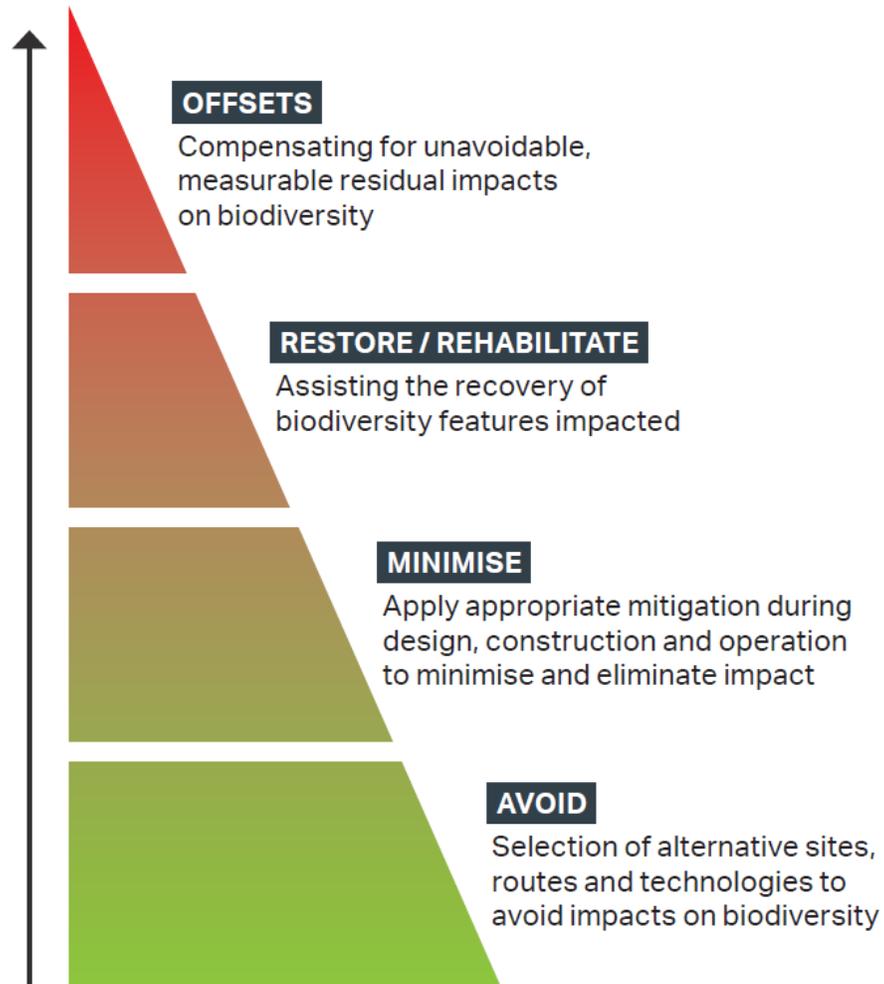


## Declines in biodiversity

- Coastal and marine ecosystems support much of the world's population
- Declines in biodiversity continue due to human activities
- Biodiversity offsetting is of growing importance
  - balancing environmental impacts from development



# NNL, BNG and offset...



- Design then on-site **mitigation always comes first...**
  - But is **not always enough**
- **Not always needed** to achieve NNL or BNG
- **Aim of offsetting:** to achieve NNL or a BNG as a **response to unavoidable residual impacts** of development



## Project Example: Port Development, West Africa

- Loss of turtle nesting habitat
- **AVOID**
  - Zero development
  - Active Development Location Alternatives
- **MINIMISE**
  - Mitigation measures outlined in EIA

# Project Example: Port Development, West Africa

## – RESTORE / REHABILITATE

- Nesting beach lost under project footprint
- Operational phase of the Project is not limited

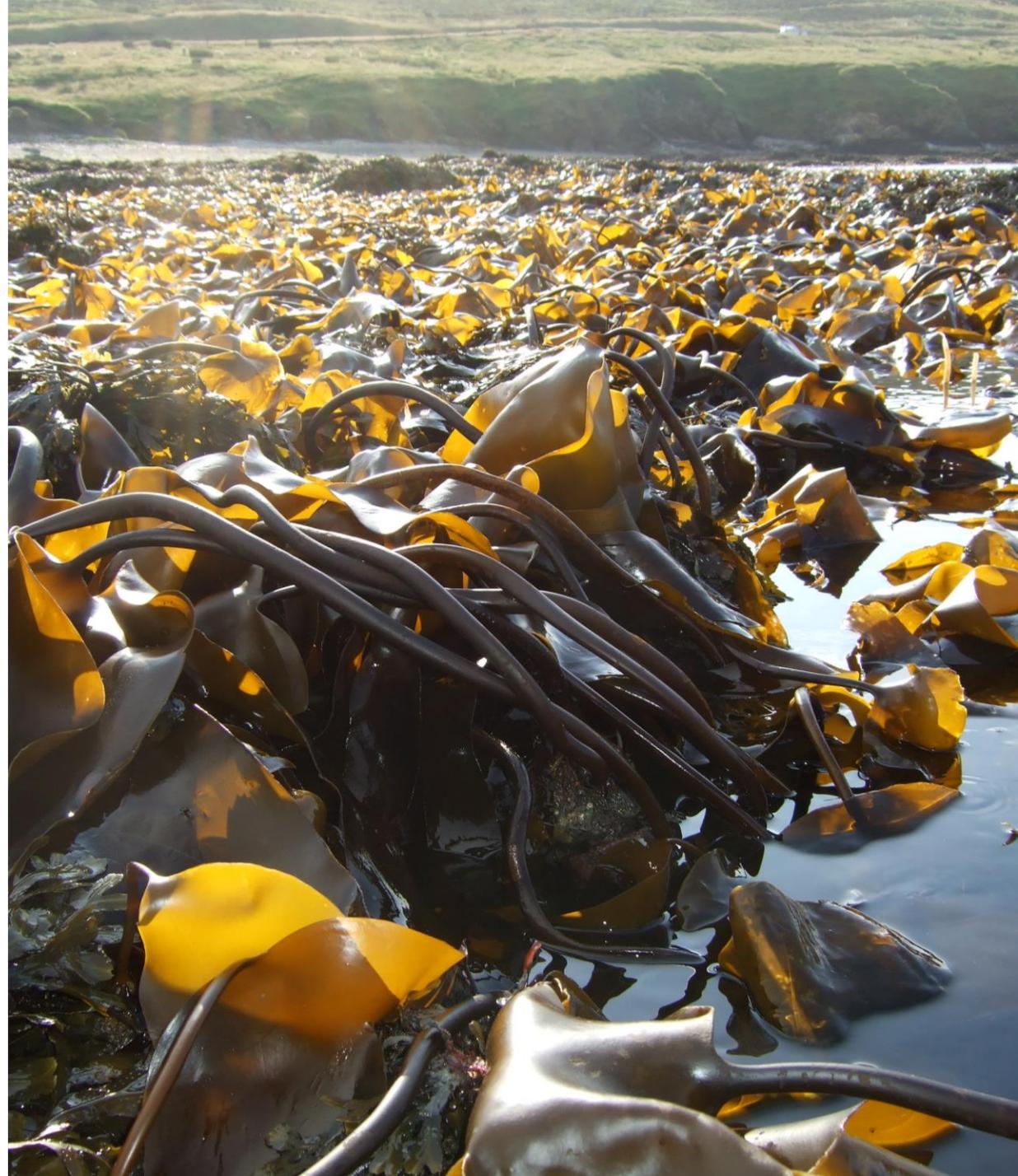
## – OFFSET

- Engagement of in-country specialists
- Development of initial monitoring protocols
- Agree on appropriate offset strategy
  - e.g. turtle hatchery, translocation of nests, working with academics



# Offsetting

- Offsetting is the **final step** in the mitigation hierarchy as a **response to residual impacts**
- Offset policy development and **research have focussed on terrestrial ecosystems and species**
- Marine lagging behind, but
  - Growth of practice in marine systems



# Showing us the way...

## – Policy

- EU Birds and Habitats Directives
- Marine Strategy Framework Directive
- EU Biodiversity Strategy to 2020
  
- *All relate to biodiversity offsets but are not regulatory frameworks specifically for biodiversity offsetting*

## – Guidance

- Success stories
- Approaches to encourage actions
  
- Defra
- CIEEM
  
- *Largely overlook marine habitats*
- *No subtidal examples*

## – 25 Year Environment Plan

- Plan sets out goals for improving the environment
  
- *Aims to reverse the loss of marine biodiversity and, where practicable, restore it through BNG not just NNL objectives*

## – Lender Compliance

- International Financial Corporation's (IFC) Performance Standard 6
  
- *Distinction between neutral compensation (NNL) for natural and modified habitats and BNG requirements for biodiversity features which trigger critical habitat consideration*

# Ecological Equivalence

- Ensures that biodiversity losses and gains are comparable and represent a **fair exchange**
- Similar **values**, **quantities** and **types** of biodiversity
- Gains of a higher conservation priority; **Trading-up**



# Metrics

## – Defra Biodiversity Metric

- Scoring criteria use habitats as a **proxy** for biodiversity
- May be applicable for **well-surveyed** seabed habitats but...
- The marine environment presents additional challenges because it is **three-dimensional** with **high biophysical connectivity** and many **inaccessible areas**

## – Habitat Equivalency Analysis

- Can be applied to accidental or anticipated impacts on **terrestrial and coastal** habitats
- more accurate assessment of **indicator species** for impacted and offset sites
- Single metric

## – Uniform Mitigation Assessment Method

- Assesses impacted and offset sites in **wetlands and shallow coastal** areas
- **Multi-criteria** analysis of the state of the environment

**Need for a standardised metric to consider complex marine environments**

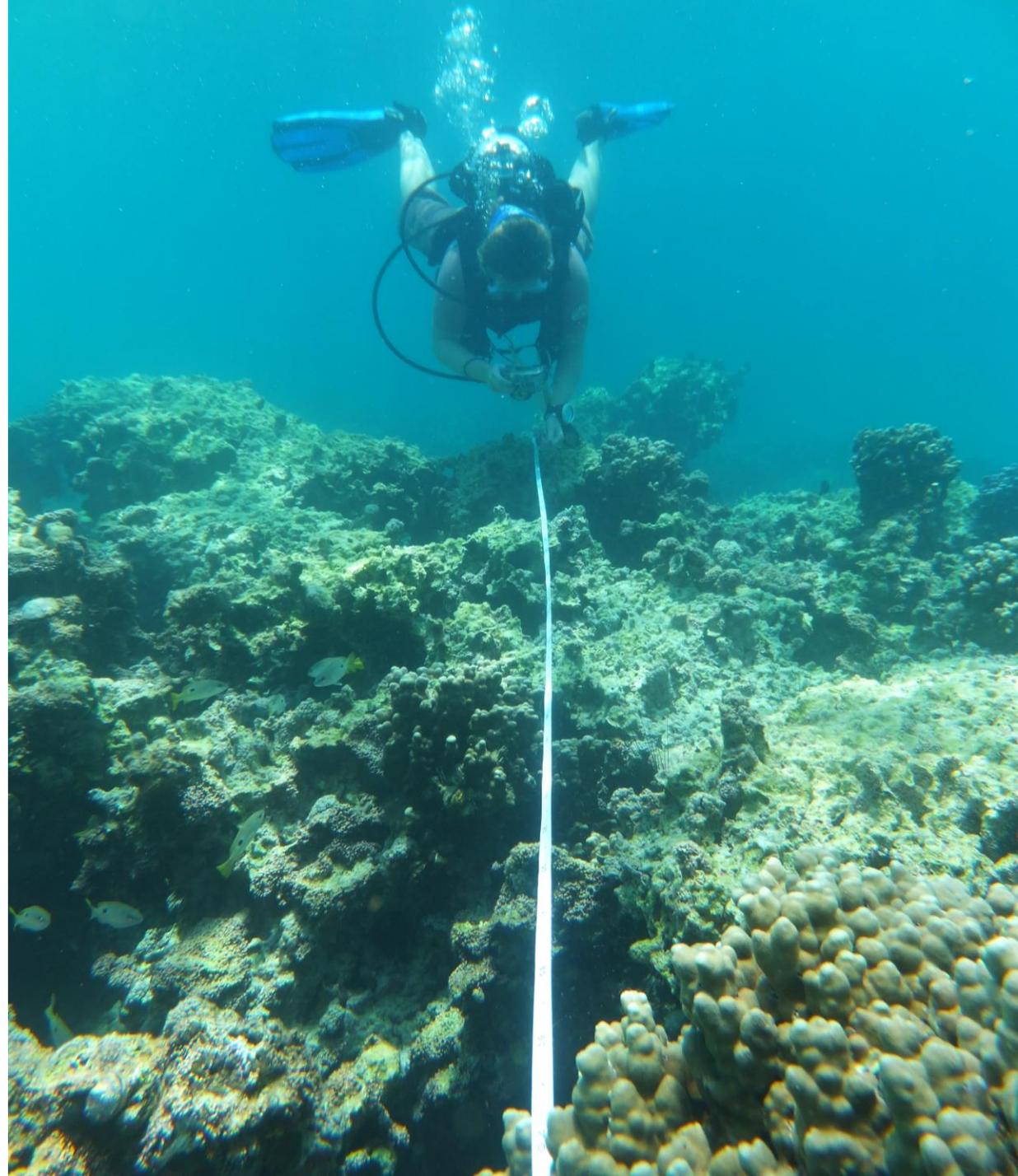
# Types of offset

## Direct Offsets

- Replacement of 'like for like'
- Habitat restoration / enhancement
- Improving degraded habitats in other areas
- Creating new habitat of a higher conservation value

## Indirect Offsets

- More widely applied
- Additional Conservation Actions
- Can take several forms:
  - Provision of funding
    - Research
    - Monitoring
  - Data sharing





## Challenges in the marine environment

- High connectivity
- Data deficiency
- Transboundary and cumulative impacts
- Imperative Reasons of Overriding Public Interest



# Challenges...

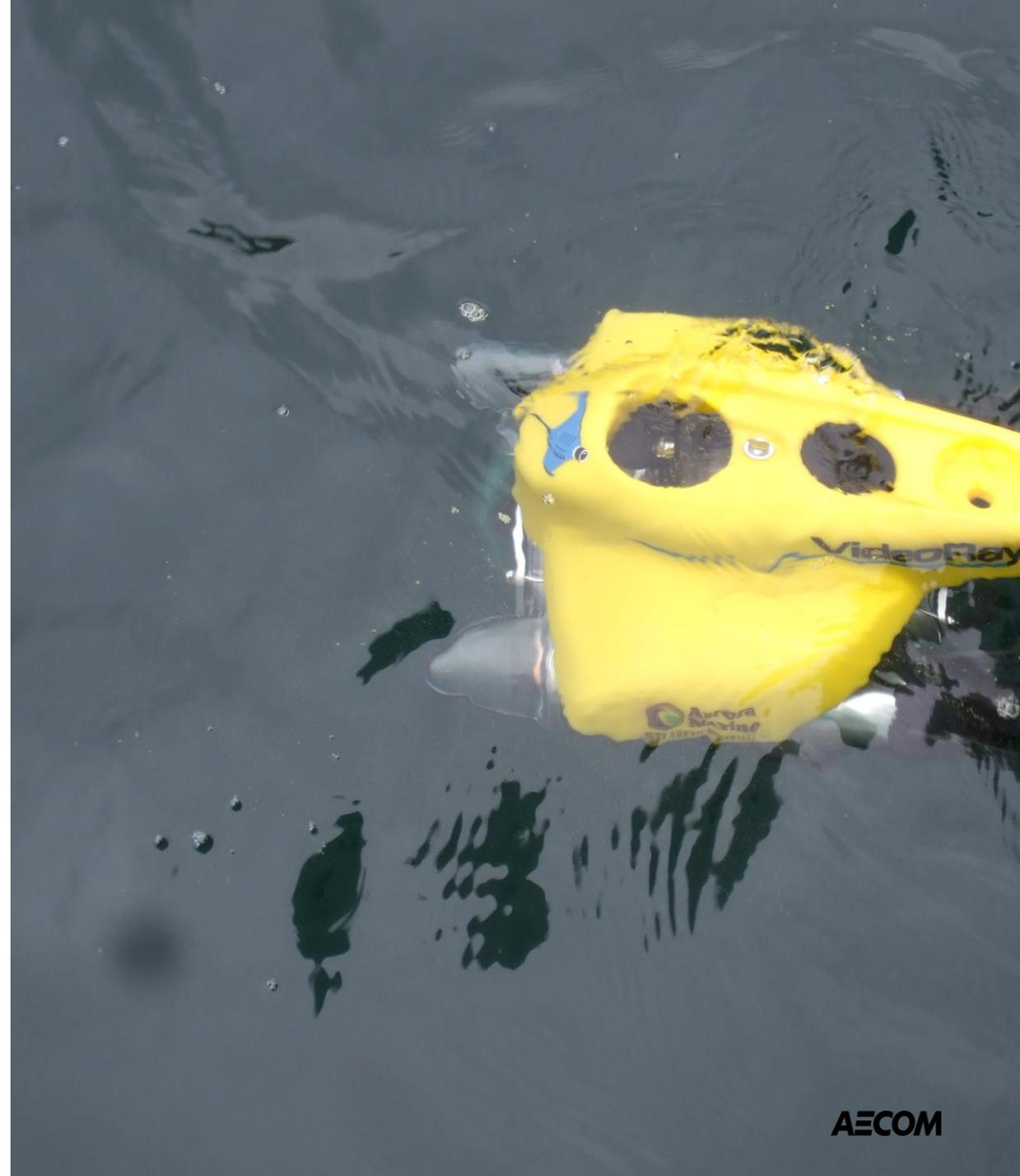
## High connectivity

- Between habitats and environments
- Difficult to separate specific development impacts
- Diffuse impacts
  - Pollution
  - Sedimentation
  - Underwater Sound
- Shifting baseline trends
  - Makes measurement of success a challenge

# Challenges...

## Data deficiency

- Data collection is expensive
- Lack of data leads to greater uncertainty
- Marine offsets often require more investment in baseline and monitoring data collection





## Challenges...

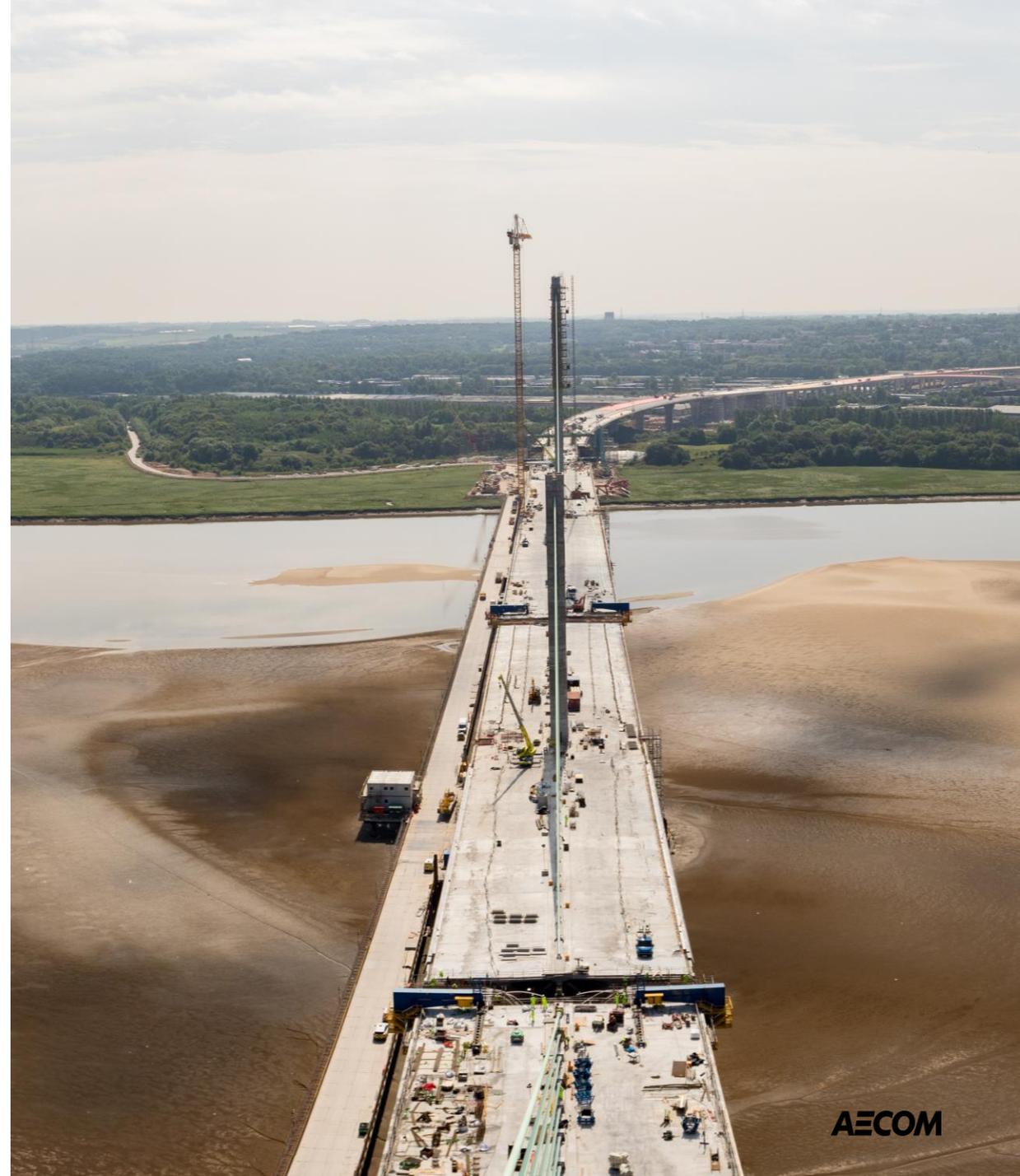
### Transboundary and Cumulative Impacts

- Particular issue for wide-ranging migratory species
- There is a need to develop strategies
  - Integration of offsets into marine special planning and conservation management
- Lack of effective, defined, co-ordinated governance beyond territorial waters

# Challenges...

## Imperative Reasons of Overriding Public Interest

- Designation can be difficult to sustain
- Out of sight, out of mind
- Greater need for continued development



# The importance of **collaboration**

- Necessary to overcome the challenges
- More collaboration with scientists and researchers to develop an evidence base
- Collaborate with designers and engineers at a much earlier stage
- Success requires collaboration between policy makers, regulators, developer consultants, researchers and stakeholders



## Concluding remarks

- Need for greater advances in marine NNL and BNG supported by policy
- Consideration of three-dimensional environment with high biophysical connectivity
- Can be done with collaboration

**AECOM**

Imagine it.  
Delivered.

