

# Marine Pathways

## Best Practice in Citizen Science: Invasive Non-native Species Workshop

19<sup>th</sup> September 2014

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# Key pathways

- Commercial shipping – ballast water/biofouling
- Recreational boating – biofouling
- Aquaculture - Contamination of imported stock
- Natural dispersal



CEFAS 2014. In draft: *Introduction of Marine Non-Indigenous Species into Great Britain and Ireland: Hotspots of Introduction and the Merit of Risk Based Monitoring*

# Marine Pathways Project – 2013 to 2015

NATURAL  
ENGLAND

- Establishing and trialling early warning networks – inshore and offshore
- Working with industry to develop codes of practice/guidance for marina operators, recreational boat users and aquaculture
- Establishing Pathways Advisory Groups
- Development of a network of volunteers to champion marine INNS
- Running demonstration projects on the control and management of a suite of invasive marine species including carpet seasquirt and Chinese mitten crab



Department  
for Environment  
Food & Rural Affairs



Dualchas Nàdair na h-Alba  
Nàdar air fad airson Alba air fad



Llywodraeth Cymru  
Welsh Government



Cyfoeth  
Naturiol  
Cymru  
Natural  
Resources  
Wales



 The Scottish Government  
Riaghaltas na h-Alba



Cefas



Bord Iascaigh Mhara  
Irish Sea Fisheries Board

# MSFD: Monitoring programme for Descriptor 2 'Non – Indigenous Species'



- TARGET: 'Reduction in the risk of introduction and spread of non-native species through improved management of high risk pathways and vectors.'
- Study by CEFAS as part of the Marine Pathways Project: '*Monitoring and surveillance for non-native species in the marine environment*' – a review of existing monitoring programmes in UK territorial waters to assess their potential suitability for detection of non native species.

## **Marine Strategy Part Two: UK Marine Monitoring Programmes**

**July 2014**

- 'Options for developing monitoring programmes by 2014 for the abundance and distribution of non native in high risk areas are currently being considered.'

# Citizen science examples



**sealife tracker**

THE MARINE BIOLOGICAL ASSOCIATION

SEPA Scottish Environment Protection Agency

BSAC Dive with Friends

Scottish Natural Heritage  
Dualchas Nàdair na h-Alba  
All of nature for all of Scotland  
Mòran air fèid airson Alba a' fèid

Environment Agency



# Break out questions



- What are the pathways for the spread of invasive non-native species (INNS) in marine?
- How has citizen science been used in the monitoring of INNS through these pathways?
- Who has led these schemes? (eg national organisation, local recording group)
- How have volunteers been approached / informed about the issues? (eg through apps, local organisations, wildlife trusts etc)

# Break out questions



- Which organisations/people have been needed to be involved to make the citizen science approach work? (eg port authorities, farmers etc)
- Which approaches / schemes have been most successful in using citizen science to monitor INNS?
- Has citizen science tested / implemented INNS control processes?
- What barriers have you come up against and how did you overcome them?
- What else could be done to enable citizen scientists to monitor INNS?