

Successful Implementation Of Community-led Nature-based Solutions For Climate Change Adaptation On The Maharees, Co. Kerry, Ireland

A case study identifying the barriers and enablers of community-led partnerships to sustainably deliver Nature-based Solutions & related actions for climate change adaptation, biodiversity conservation and coastal heritage preservation in Ireland.

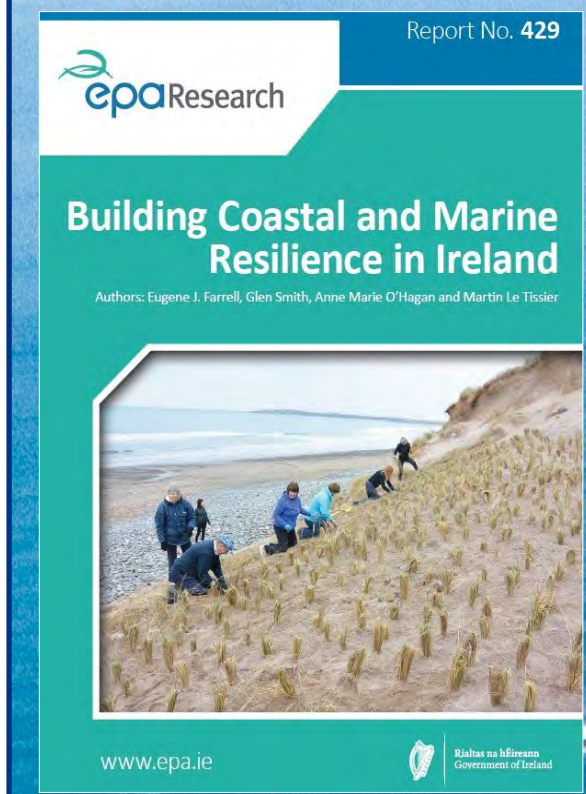


mahareesconservation.com
maharees heritage and conservation
mahareesconservation@gmail.com

AUTHORS
Martha Farrell ¹, Eugene Farrell ²
⁽¹⁾ School of Business, Computing and Humanities,
Munster Technological University
martha.farrell@mtu.ie
⁽²⁾ Geography, University of Galway
eugene.farrell@universityofgalway.ie
Ollscoil na Gaillimhe
UNIVERSITY OF GALWAY



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- Maharees community guided report recommendations based on their shared experiences.
- Report identified key institutional (governance, legal responsibilities; lack of stakeholder forum) and technical (climate adaptation, funding; environmental designations; erosion and flooding; seasonal tourism) barriers to coastal communities like Maharees trying to build resilience to climate change and growing visitor numbers.
- In Ireland, community-led efforts to build resilience to climate change are hindered by the absence of an engagement mechanism that recognises the validity of community-determined pathways to resilience.
- Ireland needs to (1) empower and (2) resource both local authorities and communities like Maharees who are willing to engage in actions to sustainably manage their coast.
- Ireland needs a coherent national plan to prioritise coastal erosion and flood risks, including supporting community-led Nature-based Solutions.

Challenge 1: NbS to restore degraded sand dunes

Degraded sand dunes have been restored and have become more biodiverse as a result of marram planting (with help from NGO Clean Coasts) and controlled access. MCA volunteers have secured funding (through Kerry County Council (KCC) and National Parks & Wildlife Service (NPWS)) for and erected dune fencing to restrict access and allow the dune species to survive without human interference. Signage has been erected to appeal to visitors to use official paths and official camp sites.

Enablers: MCA became a Clean Coasts group; MCA organized community training events; MCA sourced local funding for trowels and signage; MCA purchased and erected fencing to protect NbS areas; Wide participation of schools, other groups & full spectrum of community.
Barriers: MCA had to identify and self-fund the fences and source expertise to install. Continued maintenance by MCA volunteers multiple times each year. State agencies should have more resources to manage coastal SACs.



Challenge 2: NbS to control sand deposition on access road

The road at a site near Magherabeg Cut had been blocked by sand and cleared 17 times by KCC in winter 2015-16. An NbS based on chestnut sand fencing was delivered in collaboration with University of Galway, KCC and NPWS was co-designed to address this hazard. The only access road in/out of Maharees peninsula has not been blocked since.

Enablers: MCA designed an NbS to reduce the wind blown sand hazard. The MCA worked with coastal scientists to select the optimal location and write a proposal for approval and funding (€5000) to NPWS and KCC. In October 2016, the MCA gathered all the stakeholders on the dunes to illustrate the issue & solution via NbS. MCA agreed to install NbS via volunteer hours.
Barriers: The MCA had no clear guidance on who could make decisions on implementing the NbS in the SAC. The MCA had to source the fencing, install it and have continuously maintained the fences since installation in April 2017. The seaward fences have been dug out and raised at least three times and a buried fence replaced in one instance - all work done by volunteers.



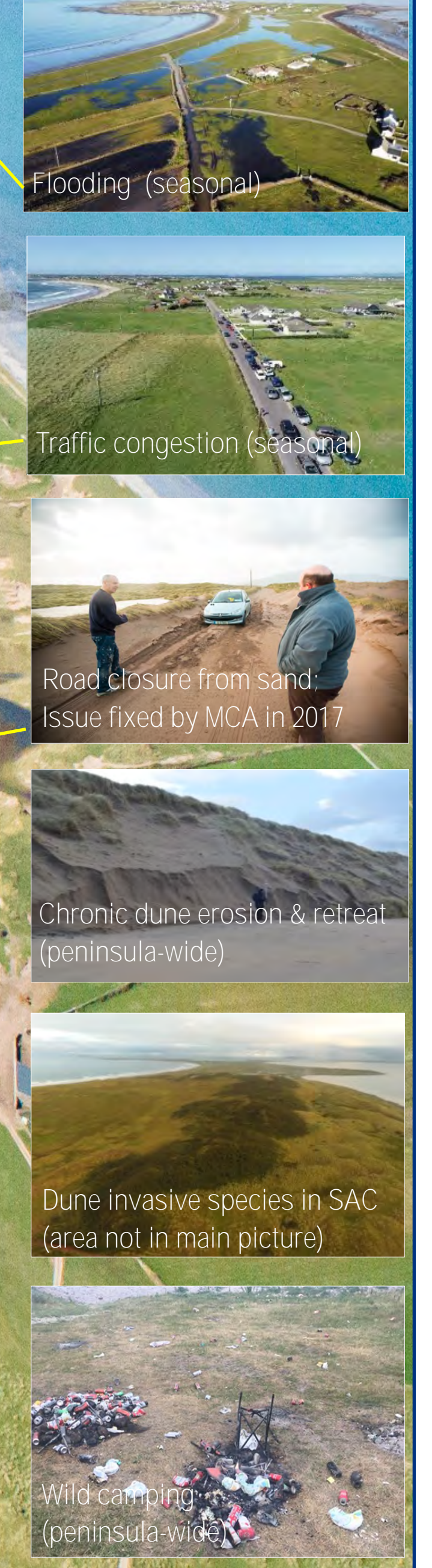
Challenge 3: Adapting to climate change (what are the medium & long-term solutions?)

A Coastal Erosion and Flood Risk Management Study has recently been completed. Funded by the Office of Public Works and the local authority Kerry County Council (KCC), it sets out a medium to long-term prognosis for the tombolo and suggests a range of measures to protect it.

Enablers: MCA developed working partnership with Kerry County Council who prioritized their area for risk management study. Report recommendations were developed in consultation with the MCA.
Barriers: Selection of coastal areas for these studies is very competitive and takes years to complete. Funding to carry out the interventions is not



Examples of local challenges



OVERVIEW The Maharees is a tombolo on the southwest of Ireland comprising part of the 'Tralee Bay and Maharees Peninsula, West to Cloghane Special Area of Conservation (SAC)' for the diverse coastal habitats it supports: sand dunes, tidal mudflats, Atlantic salt meadows and estuaries. The wider area of the Maharees and Tralee Bay is a Special Protection Area (SPA) - an internationally important wetland for 20,000 wintering birds. The Maharees tombolo is dominated by an extensive sand dune system and most of the year-round population (approx. 310 people) live to the north of the dunes, relying on a single road through the dunes to access work, education, healthcare and other services. The tombolo is a popular tourist destination with a large influx of visitors over the summer months. This low-lying tombolo is highly vulnerable to the effects of climate change, Atlantic storms and human activities—all of which are increasingly impacting the dune ecosystems. The lack of an integrated plan to manage human activity (such as pedestrian access, parking, camping and fires) had led to the destabilisation of the dune system at critical points which was impacting access to and from the peninsula for the year-round residents.

The local community mobilised to form Maharees Conservation Association CLG (MCA) in 2016. The MCA is a 100% volunteer-run/community-led registered charity established to respond to the challenges faced by the Maharees community. It formed following a period of crisis caused by sand deposition on the only access route in the area - effectively locking in the community on several occasions. The community group has, with the help of a range of state agencies, academic institutions and NGOs, pioneered a series of collaborative nature-based interventions (using marram grass planting, fencing, straw bales, signage) and regenerative tourism initiatives to harness many environmental, economic and social benefits. The community-led dune conservation work has resulted in transformative and positive ecosystem changes along the peninsula and has been supported by a programme of community-led events and experiences to highlight the conservation work and maximise awareness about the fragility and importance of the dunes amongst the resident and visiting community.

The MCA has also shared learnings with academics and policy makers and engaged in extensive discussions with state agencies on dune protection and visitor management - resulting in systems and facilities to support regenerative tourism in the area. The success of these NbS and community-led actions has helped to transform the community from one of disempowerment in a crisis to one of agency and resilience in the face of climate change. This work has inspired other communities all over Ireland to take action to protect their own dune systems. This community-led collaborative action has served to build community organisational capacity and also to build relationships, trust and social cohesion among different members of the community, among community leaders at an inter-community level and also among state agencies, academics and other climate change adaptation actors. This social capital and community resilience will be essential to the Maharees community as climate change effects will be felt more keenly in the future.

Challenge 4: Learning and raising awareness about biodiversity & cultural heritage among local and visiting communities

MCA members have educated themselves on the wildlife habitats through interaction with Munster Technological University (MTU) wildlife (and external experts) and regenerative tourism lecturers to maximise awareness about the fragility and importance of the dunes amongst the resident and visiting community. A Community Education Course provided by Kerry Education Training Board (ETB) inspired more members of the community to get involved and take action to protect biodiversity. A variety of sand dune habitat/biodiversity awareness materials and experiences have been delivered: a series of guided walks/talks/ experiences, signage, species spotter sheets, a mural project, posters and a mobile-accessible self-guided heritage trail along the beaches of the tombolo.

Enablers: Having the BSc programme in Wildlife Biology nearby at MTU Kerry provided access to experts who were willing to share their knowledge. Forming a separate biodiversity sub team enabled a focus and a set of volunteers to deliver regenerative tourism/ interpretive heritage experiences. A local historian who had the vision, the drive and the research skills to document the cultural heritage and traditional place names of the area.
Barriers: Understanding the full array of funding streams available; learning how to write successful funding applications.



Challenge 5: Working with partners to provide visitor management systems and facilities

Working with partners such as KCC, the NPWS and the police service, an Garda Síochána, MCA are assisting in the provision of a safer visitor management system during the busy summer season. A summer car park, line marking, signage, more Garda support and a system of reporting illegal parking is ensuring that the quality of life for residents, visitors and wildlife is much better.

Enablers: Evidence provided by KCC traffic counter and MCA drone survey to show the danger to visitors and residents posed by wild / dangerous parking
Barriers: Having to make the case for a seasonal surge in visitor management facilities (parking, policing, traffic management system) to match the surge in visitors. Still without adequate alternative solution for wild camping.



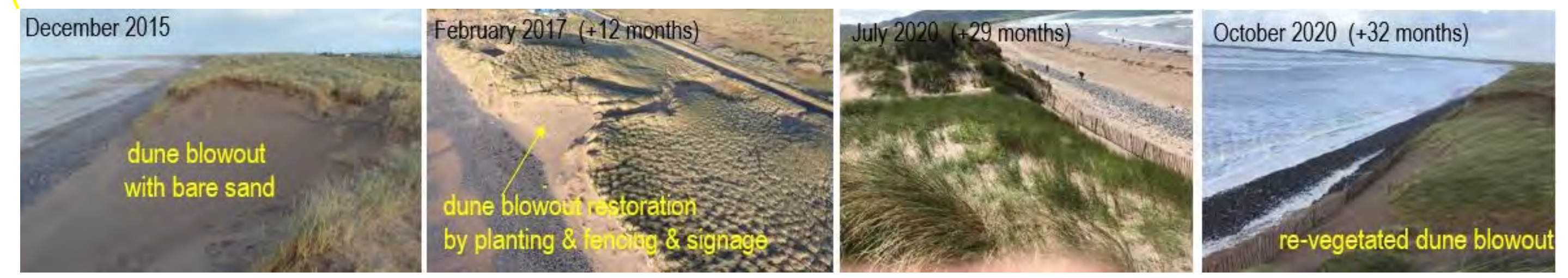
Challenge 6: Sharing our learning; informing research & climate adaptation policy; and inspiring other communities to take action

MCA has consistently shared learning through a range of outreach events including site visits (academic institutions, state agencies and other communities) and has contributed to academic research which in turn - ideally - is impacting policy formulation e.g. Climate Change Advisory Council two visits to site. <https://talk.ie/>, <https://macobios.eu/>, <https://www.ccatproject.eu/>, EPA, Marine Institute, Geological Survey Ireland, CHERISH research projects.

Enablers: Support from academics in University of Galway and NGO Dingle Hub to share the Maharees story. Willingness of MCA to present their story in conferences, workshops, seminars and meetings to engage with all relevant stakeholders.
Barriers: Gaps in knowledge on standard of delivery and evidence required to be of value to academic community.



Results of community-led dune restoration from 2016 to present using NbS comprising planting, access control (fencing), weeding, signage and parking. Site requires continually maintenance by community.



Results of community-led dune restoration using NbS. Dune blowout nearly fully restored (vegetated & sediment infilling) which increases resilience to storms.

Acknowledgements:

The MCA would like to acknowledge the landowners, volunteers, residents, visitors, schools, support & funding organisations, State and public bodies, researchers, and fellow coastal communities who have all contributed to the success of the MCA and continue to inspire us to make change so that future generations can enjoy and appreciate Maharees as we do.