Dune Resilience Project – Pilot Phase Project Report

September to December 2025

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1. Introduction

Background to JBA Consulting report and development of project

Concerns over coastal erosion led to The Highland Council commissioning a study by JBA Consulting (Dynamic Adaptive Pathways, Nov 2023). This study concluded:

- The dune system plays an important role in coastal flood protection so maintaining the dune system is integral to reducing coastal flood risk to Nairn.
- With the rise in sea levels already being experienced, and further sea level rise committed to in the coming decades, Nairn's coastal edge will, in many places, retreat landwards.
- There is potential to increase the protection provided by the natural system of dunes at Central Beach by increasing the resilience of the dunes and correspondingly reducing risk

The following measures were recommended in the JBA Consulting report to improve dune system condition at Nairn and were thought to be deliverable by the Dune Resilience Project:

- Vegetation planting: Development of a dune planting programme that focuses on vegetation enhancement and coverage (Marram grass).
- Identify and remove/reduce sources of disturbance and potential nutrient input supporting the OV communities at the back of the dune systems to create space for and encourage colonisation by sand dune and maritime plant species.
- Limit access to the sand dunes to official paths to allow for recolonisation of bare sand patches. •
- Put in place signage or wardening to discourage use of barbecues and reduce the risk of fire. •
- Control the invasive non-native species present to prevent spread into the dune systems. Where possible, eradication is recommended.

A vegetation survey completed by JBA had identified "that high levels of human activity have resulted in multiple tracks of bare sand through the dune system; these areas of bare sand may contribute to dune instability and increase risk of erosion. Where there appeared to be higher levels of recreational activity, there was also evidence of littering and fire-setting, with resultant localised harm to dune habitats".

A Community Led Local Development grant of £8775, was secured from Highlands and Islands Climate Hub by NICE Nairn who took on the role of leading the project and a Project Co-ordinator, Mark Bradfield, (an experienced conservationist) was recruited in mid-August. A project Steering Group including the Nairn Common Good Officer and

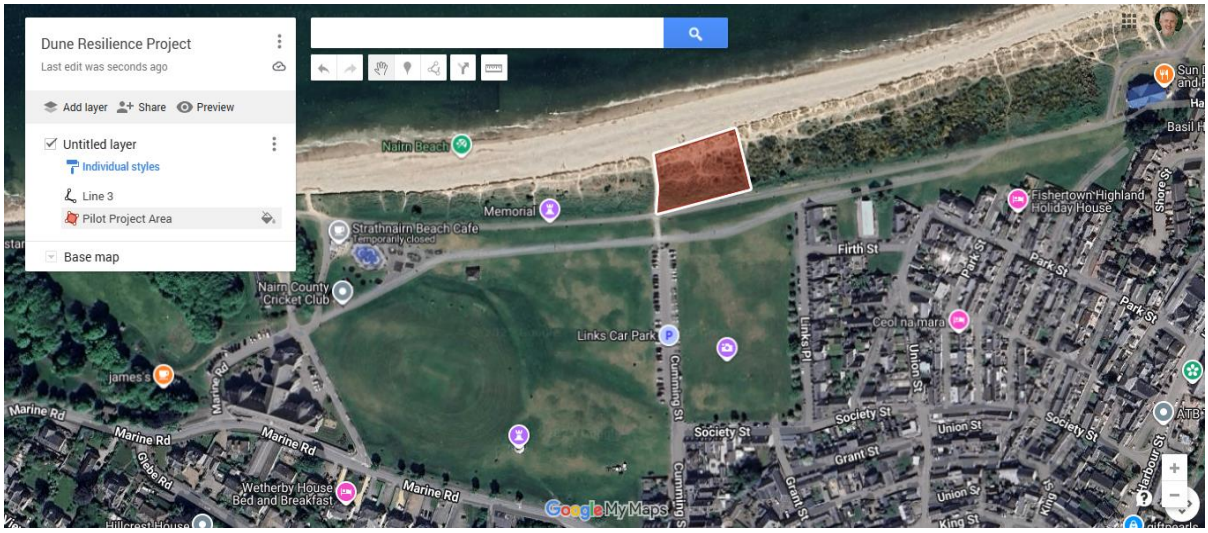
reps from Climate Hub, Nairn BID and local community councils, was brought together on 21st August by NICE to support project delivery with help from local environmental project Green Hive, and practical guidance from RSPB, Butterfly Scotland and Highland Council Flood Team.

2. Site Selection and Chosen Interventions

Selection of Pilot project work area

The JBA report had identified areas of low, middle and high resilience at Nairn Central Beach (Nairn Common Good Land). The decision was taken not to trial methods in high-risk areas. The pilot site was selected as it was of mid-resilience, highly visible to the public, contained some highly eroded sections, contained a manageable amount of scrub/trees and had enough healthy marram to allow translocation within the plot.

Figure 1 – Pilot Project Area



Key Interventions

The key interventions were aimed at increasing marram grass condition and abundance as marram grass is critical for healthy dune formation and ongoing resilience. Marram grass can be shaded out by scrub and trees and eroded by heavy footfall and storms. Formation of scrub and trees in dune habitat can also lead to the dunes becoming "fixed" – i.e. no longer able to grow or respond quickly to storm damage. For these reasons it was decided that scrub and trees should be removed in the pilot plot. Invasive plants were also identified and treated or removed as they can also outcompete marram grass and reduce dune resilience. Access control and public engagement was necessary to reduce erosion due to footfall through the dunes.

Newly planted marram grass requires protection from trampling and so the planting phase took place only once all other works had been completed. Chestnut paling

fencing was selected as it has been used successfully on many similar projects nationwide, allowing sand, water and wind to pass through and looks appropriate in the dune setting

Planting of Marram Grass

Advice was sought from The Highland Council and a site visit carried out on the 25th September. Katy Martin (THC ecologist) advised that there was plenty of healthy marram grass on site and that translocation would be appropriate and logistically much easier than transplanting from East beach. Concerns were expressed that the purchase of plug plants from the Borders area would not be of local provenance, as well as being more expensive and possibly less healthy after transportation. It was agreed by all present that the proposed site was appropriate for the pilot project.

3. Main Deliverables

A thorough litter pick of the pilot area was completed by the Project Co-ordinator on the 17th September, with support from Green Hive.

Delivery of work parties

Work parties were arranged and led by the Project Co-ordinator. Dates were advertised in advance via social media and posters displayed around Nairn town centre and the beach/harbour area. Green Hive provided excellent support for the work parties by advertising them, providing a meet up point and tools, plus tea and cake afterwards.

Volunteer work parties were held on a mix of weekend and mid-week days to ensure a wide cross-section of the public could attend, details are provided in Table 1 below.

Table 1

Time	Date	Main Task	No Volunteers	Volunteer Hrs
09.30 – 12.30	Saturday 27th Sept	Scrub and invasive clearance	4	10
09.30 – 12.30	Tuesday 7th October	Scrub and invasive clearance	8	24
09.30 – 12.30	Saturday 11th October	Scrub and tree clearance	19	47.5
09.30 – 13.00	Thursday 23rd October	Clearing brash, translocating marram	10	36
09.30 – 13.00	Saturday 25th October	Transplanting marram	6	17

09.30 – 13.00	Wednesday 29th October	Transplanting marram	8	21
Totals				**155.5 Hrs**

Scrub and tree removal

A large volume of scrub – mostly broom but with some gorse plus several small trees and saplings, was removed and stored at the path edge so that the Highland Council's Amenities Team could chip the debri and remove from this Nairn Common Good site. Although time consuming this was the only method available as the material could not be buried or burnt on site.

Marram Grass Planting

Just under 600 marram grass plants were translocated within the pilot area.

Non-native Invasive Plants

Plants in pilot area have been dealt with as follows:

Orange Peel Clematis – 3 large sections and several smaller plants dug out using hand tools, bagged and disposed of by Council Amenities team.

Japanese Rose – dug out by hand. Some roots extensive so will probably be some regrowth – monitor for this.

Japanese Knotweed– not present in pilot area but 1 plant nearby sprayed with herbicide by trained and qualified operative.

Giant Hogweed – although mentioned as being present in the vegetation survey, none were located in the pilot area.

Fencing Installation

Research into other projects indicated chestnut paling was the correct choice of fencing – robust, attractive and in keeping with a beach setting, reusable and the design allows for good sand build up by reducing wind speed.

A local contractor (Highland Fencing and Barrier Contractors) was identified and quotes obtained initially just for materials. On advice it was decided that fencing installation was beyond the scope of a volunteer work party and HFBC operatives were paid to do this work, requiring specialist equipment to embed fence posts securely in sand. This took 2 days with signage erected on completion on 23rd October.

Wildflower Seeding

Kidney Vetch seed and Scotia Seeds Coastal Meadow Mix were applied to the fenced section of the pilot area on the 3rd December. Exposed sections of ground (created during the removal of scrub and trees or due to erosion) were scarified and the seed scuffed into the surface to ensure it did not blow away on application. This seed application should help increase general flora species richness but particularly the amount of kidney vetch present to support populations of the Small Blue butterfly and other pollinators such as bumblebees, hoverflies and moths.

Monitoring

A highly technical method of assessing dune resilience was used by JBA Consulting (Coastal Resilience Assessment, Oct 2023), which was not something that we could replicate. A simple method of assessing any changes in the pilot area was needed so a Dune Habitat Rapid Assessment was developed to achieve this. The baseline (pre project delivery) assessment was completed by the Project Coordinator on the 26th September. Ideally the baseline survey would have been conducted in the summer months when kidney vetch and birds-foot-trefoil would have been in flower and more obvious.

A key recommendation for future project work is that at least one vegetation survey annually should be carried out during the flowering period of these plants (mid-June to mid-August).

Subsequent monitoring should be carried out on a quarterly basis and ideally for a period of at least 2 years. As no funding is available at present for ongoing monitoring this may need to be completed by a volunteer. A student from the University of Highlands and Islands has kindly volunteered to undertake monthly surveying of the pilot area as part of their studies and has received guidance/training from Mark Bradfield on this before end of pilot. NICE to keep in contact with volunteer over winter months.

Fixed Point Photography and Drone Footage

We were fortunate that the Common Good Officer was able to recruit a volunteer to carry out a drone fly over before work started to create a video showing an aerial view of the condition of the dunes at Central Beach. This video clearly shows the many open areas of sand caused by erosion and the poorly vegetated areas where footfall has created compaction and poor growth of marram grass.

A “snap point” (fixed point photography) had previously been added by the Highland Council, to Nairn Central Beach to monitor general shoreline condition but this is located adjacent to the harbour, too far away to monitor the pilot area. Highland Council Flood Team provided us with 2 additional camera cradles that have been fixed to the new fencing posts at Nairn Central Beach and can be used to monitor changes to

sections of the pilot area. Both are located to the front (beachside) section of the pilot area that have much bare ground and recently planted marram. Photos can be taken on an ad-hoc basis (and as a minimum whenever the rapid assessment monitoring takes place) from these cradles and used to evidence changes over the next 2 years.

Public Engagement and Education

Due to the very short run-in time and delivery phase of this project, limited public engagement took place prior to commencing the delivery phase. Posters were displayed in prominent locations in Nairn and promotional events held as follows:

- Climate Café at Highland Weigh 28th August
- Climate Hub stall at Nairn Putting Green, on Final day of Nairn Book and Arts Festival 7th September
- Slide Show at Climate Festival Sustainable Nairnshire Event, Nairn Community and Arts Centre 25th September 2- 5 pm
- Presentation at NICE AGM public meeting 7pm 25th September
- NICE Stall at Nairnshire Community Partnership network event Fri 14th Nov 25

Press articles went out in the Inverness Courier 23 September 2025
https://www.inverness-courier.co.uk/news/community-call-to-join-pilot-project-to-future-proof-nairn-d-392902/

and the Nairnshire Community Newspaper issue 13, November 2025.
https://www.nairnshire.com/post/13-november-2025

A podcast was also recorded with the Nairnshire Community Newspaper editor on 12th November for use on their website.

Some important engagement with passers-by took place during work parties with several people asking what was happening and why. The fencing installation heightened the level of interest. Most engagement was positive with most people understanding the need for protecting the dunes from erosion and with several commenting on the appropriate nature of the fencing. A few expressed dismay at their preferred walking route being disrupted and the lack of engagement prior to fencing installation. A few also expressed concern about scrub and tree removal but most seemed reassured when we explained why this work was being carried out. Signage was installed around the pilot plot providing details of the project and contact details.

Both Nairn Primary Schools were contacted to offer education sessions, but no response was received. The Saturday 11th October volunteer work party included a supervised group from Gordonstoun School with 13 students and 3 staff taking part. A short classroom session was delivered to the MCR Pathway group at Nairn Academy on the 3rd November but a planned practical session was deferred.

4 Resources

Partner Organisations and Contributions in Kind

Green Hive(Nairn River Enterprise) were helpful in providing a venue at Seaman's Hall(with toilet and kitchen) to meet up and provided tools and gloves plus tea and cake at the end of work parties. Green Hive could not provide onsite support with volunteer work parties as they do not have someone in that role at present.

Only the RSPB were able to join in with a practical work party, providing much appreciated experience as RSPB are presently delivering their own dune resilience project at Culbin Sands. Butterfly Conservation were busy with their own projects so not able to attend work parties but provided practical advice and wildflower seed.

The Highland Council (Ward 18) in kind advisory help from Nairn Common Good Officer, including organising drone flyover footage from local volunteer, and labour from Council Amenities Team to chip material generated from scrub clearance.

The Highland Council (HQ)– expert advice from Katy Martin Ecologist and Alan Fraser Flood Team Manager plus provision of camera cradles for monitoring pilot area.

United Reformed Church also provided space for project team meetings and the end of project final event which took place in the Church on evening of 2nd December.

Donations made to Green Hive and URC from grant funds remaining at end of pilot.

Project Expenditure

Project budget - £8775 – CLLD grant from H and I Climate Hub

	BUDGET EXPENDITURE total grant 8775
3000	Workday coordinator 25 days x 120
96.24	Tools -5 bowsaws
3649.54	Chestnut paling fencing and installation
205.92	on site signage
97.20	final event catering
78.12	dunes stickers
1400	contractor to remove and chip scrub
125.73	donation to Green Hive for use facilities
125.73	donation to URC for use of facilities

Total **Funds spent by 10 Dec £ 8778.48**

£3.48 -overspend to be covered by NICE funds

A donation to NICE of £250 to support dunes work was received in Nov 25 by ERS a land reclamation company working locally. This will be carried over to support 2026 work

Next Steps

Further monitoring of the pilot area will be carried out over the next 2 years to assess the impact of the work carried out.

A successful funding application was submitted to the Nature Restoration Fund in Nov 25 to support further practical habitat work in 2026, with a further application to Highlands and Islands Environment Foundation by Feb 26 to support public engagement and engagement activity to support further onsite work. Further discussion to take place over winter months with the Highland Council, Common Good Trustees and other project partners as to how best to pursue further interventions to increase dune resilience.

A community Climate Café is scheduled at Highland Weigh 29th Jan 2026 to discuss future collaborative community led work for a sustainable Nairnshire and will include input on Dunes phase 2.

Access arrangements to the dune and beach area are of particular importance and will be researched further in consultation with local user groups. Creating hard structures in a dynamic and constantly changing environment such as sand dunes is technically challenging, expensive and may not be sustainable. Temporary/short term options may also be worth considering. It is understood that some boardwalk installed in a previous decade on the access route linking Nairn East Beach dunes with the public car park and toilets next to the Parkdean Holiday Park has since disappeared under the sand. To carry out any significant and sustainable improvements to beach access routes, suitable funding sources will need to be identified.

MB/ML for NICE December 2025