REGENERATION REVIEW

Dunbar East Beach 2025

Dunbar
Shore and Harbour
Neighbourhood Group
....making it better beside the sea....

Dunbar Shore and Harbour Neighbourhood Group was established in 2011 as a Tenants' and Residents' Association and is actively supported by East Lothian Council. Our driver is to make things better beside the sea and Dunbar's East Beach has been a focus of our attention since our group was first established.

Dunbar Shore and Harbour Neighbourhood Group

....making it better beside the sea....

Our neighbourhood extends from Dunbar Harbours to Golf House Road. We have over 90 members from over 500 households and all our projects have been driven by volunteers.

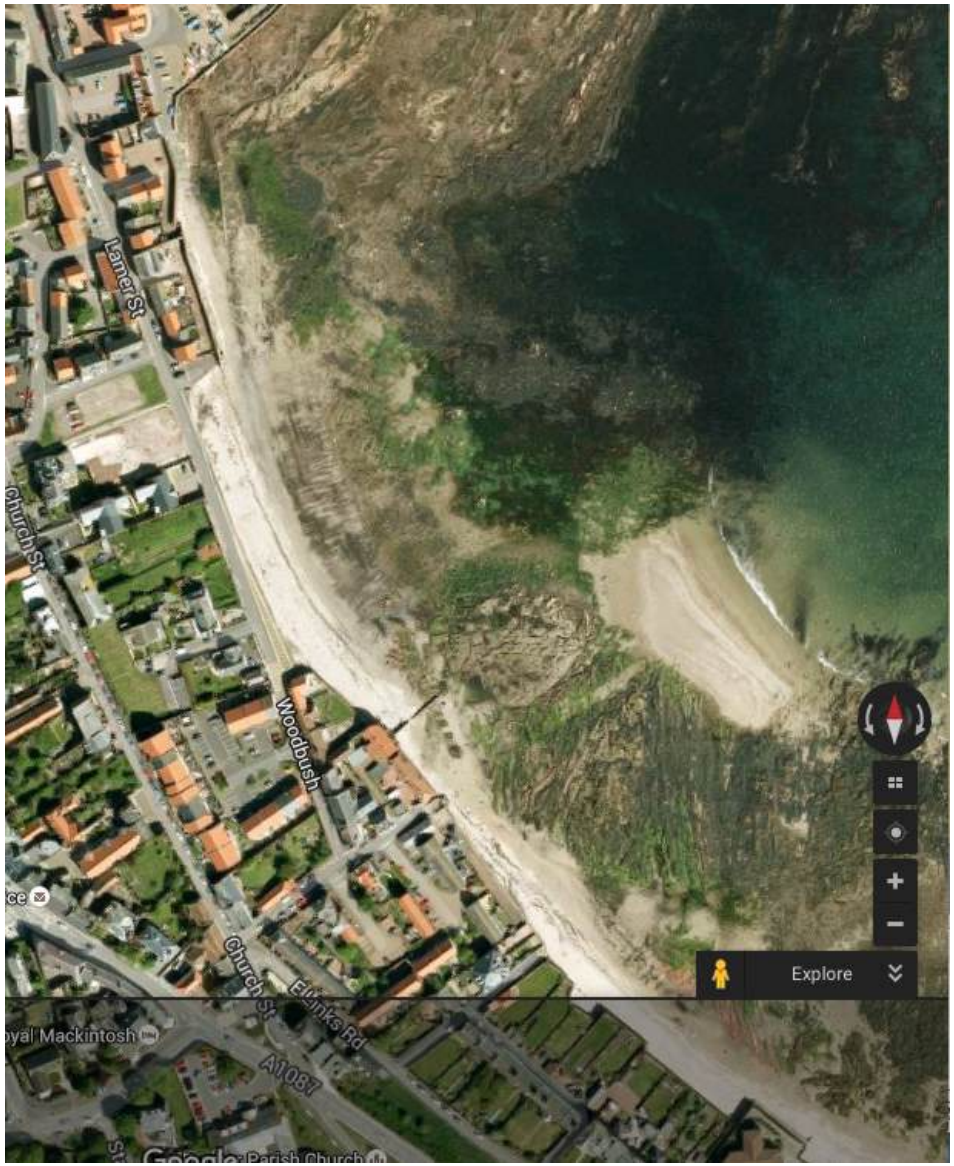
It is estimated that 25% of properties are tenanted and concentrated in the harbour area

DUNBAR EAST BEACH, and our harbours. make the place in which we live so special. We have researched its history, as far as we can, over the past 120 years; it is a constantly changing landscape. (Ref Table 1 at end of report).

Anecdotally, and within the last 50 years or so, sand levels have been just a metre below the road level. There are, equally, images of the beach much earlier than this – all rock and weed. The current issues are not new but they are, we believe cycling with increasing frequency.

We have seen sea wall collapse, road collapse, wall collapse at Cromwell Harbour, increased incidents of wave overtopping, even, now, in summer months, not just at the Equinox. Kelp dumps are frequent and often huge and there is, as yet, no reliable system for removal of material that the sea simply cannot move on its own. A failure to move rotting kelp leads to fly infestations and noxious gas escapes. Rotted and rotting material lies on the beach for months making it unusable as an amenity beach.

East Beach has received a Keep Scotland Beautiful seaside award for the past 13 years; not, we believe, for its beauty now, but in recognition of the work that our group does to make it as good as it can be, despite the challenges.



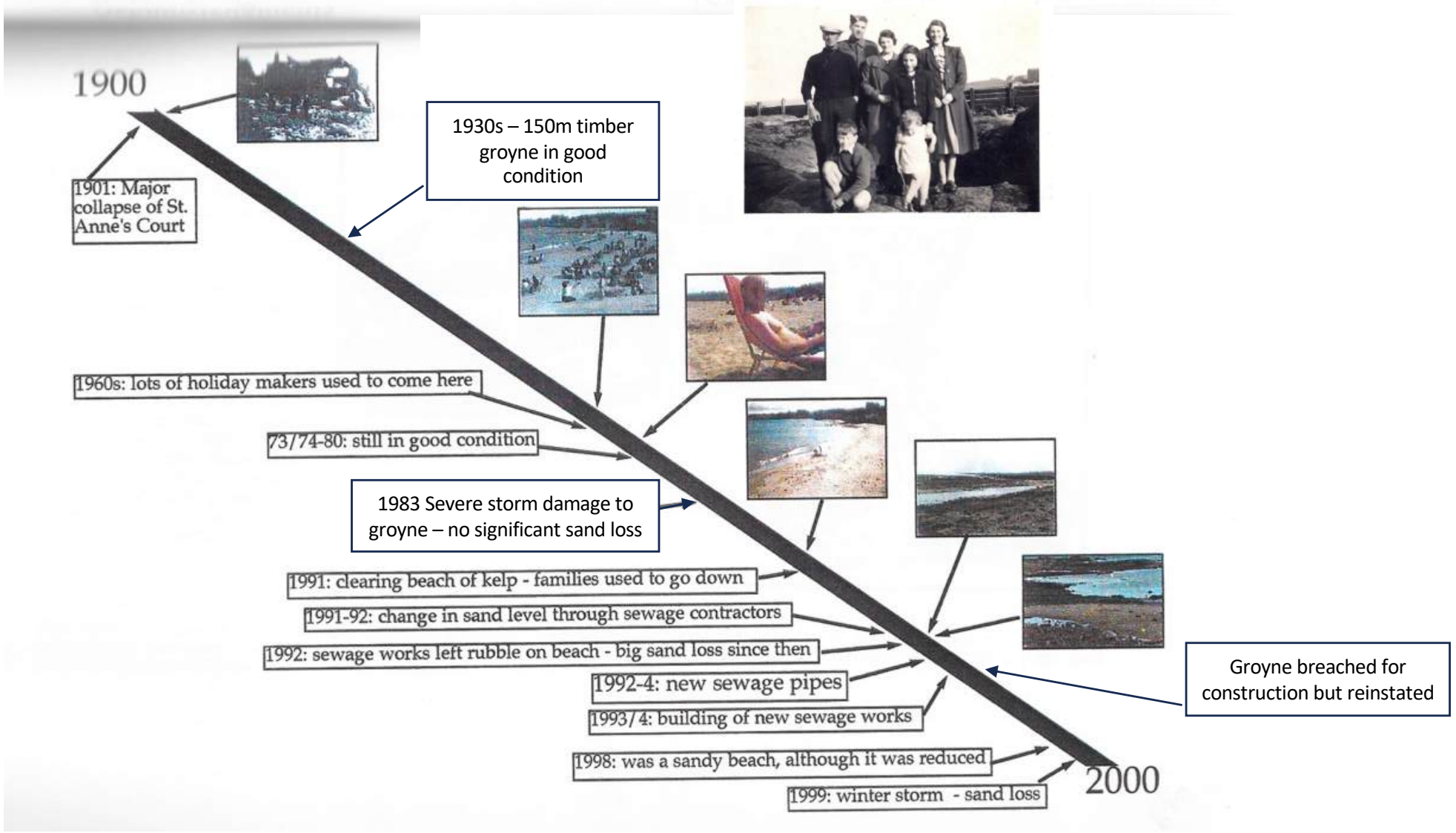
East Beach – Aerial View 2016

Beach regenerated naturally. No breakwaters

Sand on beach, no pipeline visible

East Beach – Aerial View 2025

Breakwaters in place. Beach completely denuded of sand



East Beach - 100 year time line – based on anecdote from 1960 - 2000

Dunbar East Beach - circa 1920s

Image painted from photographic records by local artist, Jim Callow

Reproduced with permission from the artist


1960s


1970s

East Beach Timeline 2000 - 2015

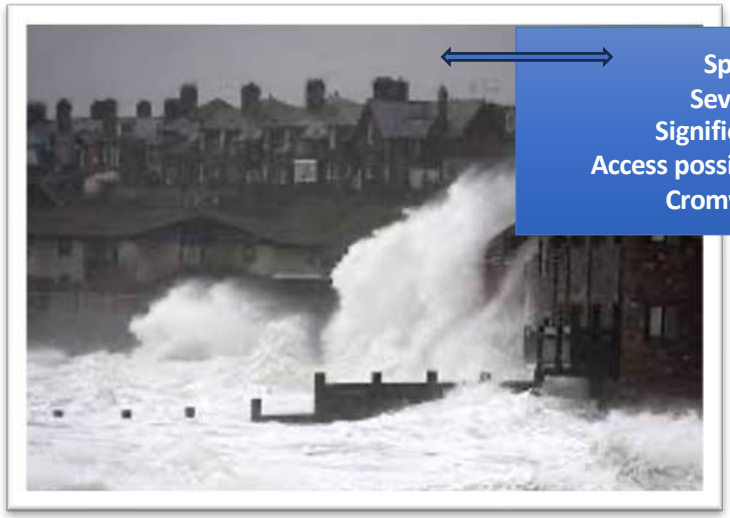
2006 = Baptie appointed by ELC to carry out study on East Beach.
Nigel Pontee research published. Main conclusions of study were
https://www.researchgate.net/publication/236024463_Causes_of_beach_lowering_at_Dunbar_Eastern_Scotland_UK

- **Beach erosion** seems to have **commenced before sewage pipe works** were carried out in the early 1990s
- **Change in wind climate** from 1960 – 1990 (with a concomitant change in wave height/direction) coincided with increased waterborne transport of sand
- **Rise in sea level** may have led to an increase in wave energy and capacity to move sand
- **Progressive deterioration of the groyne** may have increased loss of sand downshore to the south east

2002 – 2009
Beach regenerated itself
No action taken following Baptie/Pontee reports.
Groyne largely gone at low tide levels

March 2010
Severe storms
No obvious sand loss.
Groyne further eroded

Dec 2013 – Jan 2014
Wettest winter on record
Severe sequential storms
Significant sand loss



Spring 2014
Severe storms
Significant sand loss
Access possible by tractor from Cromwell Harbour

2014 – 2015
Continuing sand loss
Access not possible by tractor from Cromwell Harbour. Beach scoured to bedrock and groyne damaged further

May 2014


November 2014


November 2014


November 2014

East Beach 2015

East Beach Regeneration Scheme 2015

Recognising the huge economic, social and environmental importance of Dunbar's East Beach, East Lothian Council began work with Dunbar Shore and Harbour Neighbourhood Group and a large group of specialists and stakeholders in 2015 to determine a way forward to regenerate the beach. A proposal to spend £300k on a computer modelling was substituted by a live trial consisting of 3 key elements.

Live Trial Elements

Element 1

- Moderate impact of Scottish Water sewage interceptor pipe
  - Add defensive mattress/rock armour
  - Re-profile beach upshore of pipe to improve appearance

Complete 2017

Element 2

- Reinstate groyne to new design
  - Residual timber groyne retained
  - New concrete 'biowall' to extend 50m only
  - Allowance for new timber superstructure to groyne
  - Rock armour 'buffer' at groyne end

Complete 2020

Element 3

- Add sea defences to restrict beach scour and increase harbour effect
  - South breakwater to augment groyne action
  - North breakwater to form 'harbour' and protect seawall

Complete 2020

East Beach, post regeneration – 2020 - 2025

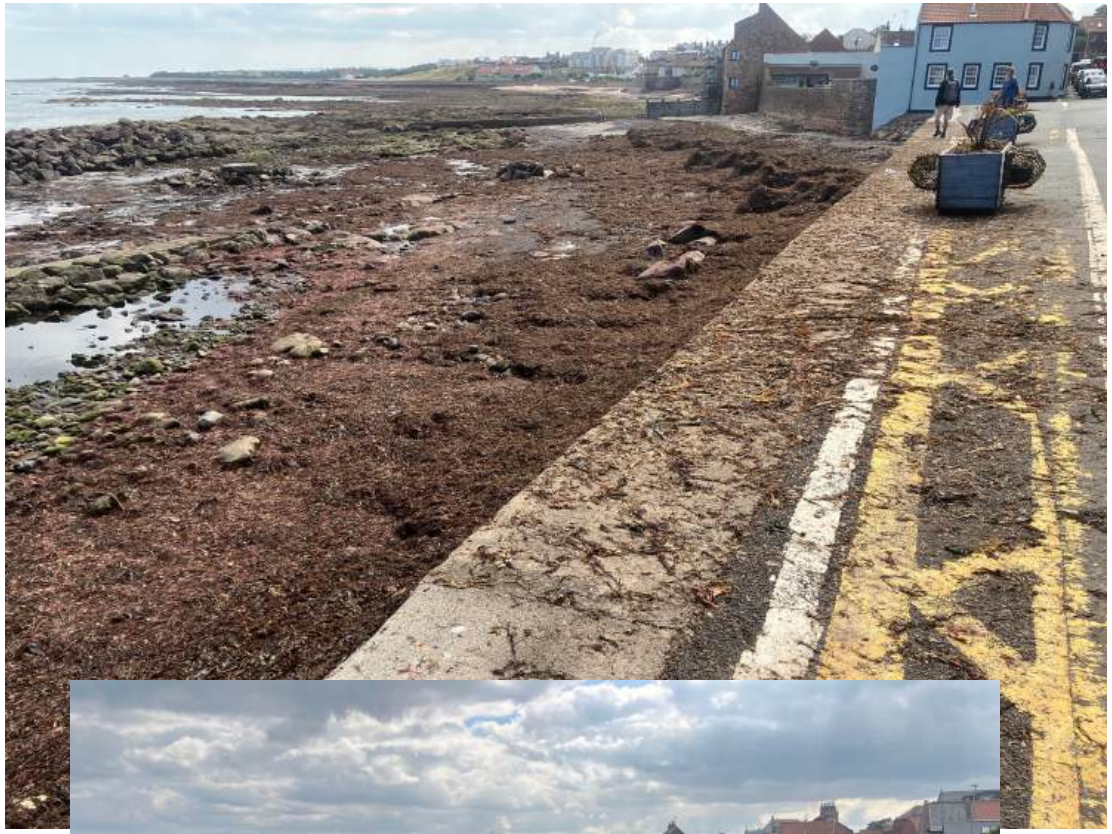
Our perception was that the introduction of the new breakwaters in 2020 did have a positive impact on the regeneration of the beach as we saw a steady natural sand build for the whole of 2021, 2022 and much of 2023. Storms in late 2023 and early 2024 seemed to reduce the breakwaters in height by some 1.5m but consultant measurement confirms that this is not the case. Since that time however, the beach has continued to degrade and the state of the beach is largely as it was in 2015. Very significant issues continue to be of concern.

Heavy seas and large swells continue to impact the sea wall which retains loose, fill material below the long established Lamer Street. Even small holes in the wall allow loose material to be drawn out, resulting in the collapse of the road. There have been four such collapses in the past 15 years, with a major collapse in 2023, 3 years after completion of the new sea defences. East Lothian Council continue to monitor and instruct periodic repair to the masonry and pointing to preserve the integrity of the wall as far as possible, but it seems inevitable that the wall will fail or become economically non-viable to patch and reactively repair damage.

Sea wall vulnerable to wave attack and subsequent road/building collapse

Images – 1920s… and 2023

There is a chronic issue with the impacts of **large kelp deposits** on the beach, with up to 500 tonnes of material being deposited, sometimes several times a year, most commonly at the equinox. There is a kelp management plan in place but it has not yet proved to be either responsive or robust. If moved quickly, the material can be converted into fertilizer. Allowing it to lie and decay on the beach brings with it its own very significant social, economic and health impacts for residents, visitors and the local economy. Rotting kelp renders the beach largely useless as an amenity, with black sludge in rockpools and in the sand. Sulphur dioxide is released in such quantities as to be discernible on Dunbar High Street and the weed provides a perfect place for kelp flies to breed and swarm, infesting homes and holiday accommodation for weeks at a time.



East Beach – 25th August 2025

Dunbar's East Beach – A vision for the future

We remain firmly of the view that Dunbar's East Beach can and should be a magnet for visitors and residents alike. The impacts of climate change and the predicted rises in sea levels make action more urgent than ever.

We believe that we must, without delay:

- continue to explore ways to encourage the beach to build naturally. The formation of offshore breakwaters – bigger and better and more frequently placed than at present - would seem to be an obvious and relatively low=cost action to take.
- Consider again, how to ensure that weed is taken off the beach timeously
- Work towards a long term masterplan that would see the construction of a new sea wall to create a destination for residents and visitors alike

East Beach Promenade - South view

East Beach Promenade - Rendered Plan 1:500@A3


extended platform
level area
steps
'beacon'
terraced seating area
ramp

East I

DUNBAR EAST BEACH RECORD OF OBSERVED/RECORDED CHANGES FROM 1830 – 2025

Table 1. Significant events, changes and observations at East Beach extracted from various sources

Date (s)	Event/Change/Observation	Source	Uncertainty in Measurement (where given)
1830	Seawall in front of Lamer Street intact	1	Comment, no measurement
1842	Construction of Victoria Harbour (second harbour)	3	Comment, no measurement
Pre 1892/93	Breach of 'harbour wall' (old) in front of Lamer St.	1	Comment, no measurement
1901	Major collapse of St. Anne's Court and Lamer St. storm damage, also high tides	1, 2, 4	Comment, no measurement
1946	Aerial photograph suggests beach width of up to 50m	5	±10m, state of tide unknown
1950s ?	Groyne constructed, approx. 104m in length, and presumably to stop easterly loss of material from East Beach	2, 4	Comment
1960	Groyne in a damaged condition	4	Comment, no measurement
1960s	Seaweed and flies a regular feature on beach	4	Comment, no measurement
1960s	'abundance of holidaymakers'	1, 2	Comment, no measurement
1965++	Coins regularly found on beach around boulders revealed after autumn storms, suggests seasonality of beach movements	4	Comment, no measurement
1970	Sand washed across beach towards golf course east of beach	2	Comment, no measurement
1973	Aerial photograph shows high water and virtually no beach, i.e. the HWM reaches the sea wall	6	No beach width - High tide?
1973/74-80	Beach in good condition	1	Comment, no measurement
1975	Groyne dilapidated	2, 4	Comment, no measurement
1975	Seaweed and kelp fly problems begin	2, 4	Comment, no measurement
1975/1980	Groyne in a very poor state of repair from various ELC reports	4	Comment, no measurement
1980	Aerial photograph beach width approx. 25m	7	±10m, state of tide unknown
1983	Severe damage by high tides (presumably through erosion of beach and damage to sea wall)	2	Comment, no measurement
1987-90	Whole beach sandy, no rubble or seaweed. Sand right up to groyne. Sand up to wall.	3	Comment, no measurement
Early 90s	Aerial photograph of sandy beach estimated to be 23m in width	1	No scale to photograph. Width inferred from ELC Ground Level Survey Drawing. Error ±1m.
1991	Families used to clear the beach of kelp	2	Comment, no measurement
1991	Sewerage interceptor pipe laid along back of beach	2, 4	Comment, no measurement
1991	Groyne removed for 2 years during construction of sewerage pipe (only 1 small section) on line of sewerage pipe	2, 4	Comment, no measurement
1991	Small quantities of rocks removed from foreshore (<0.3m diameter) and incorporated into concrete structures	2, 4, 10	Comment, no measurement
1991	Beach cleaned and boulders/rocks removed from an area in front of Lamer St. sea wall Some rocks/boulders from the beach were incorporated into concrete protection to the sewer between the Old Harbour and the end of the high sea wall. Large marine armour stone ($1m^3$)/2 tonne) was brought on to the beach from a quarry to protect some of the structures.	4, 10	Comment, no measurement
1991-92	Change in sand level during sewerage contract	2	Comment, no measurement
1991-92	Sand level dropped by 2.5-3m during sewerage construction	2	Comment
1992	Groyne section replaced by E of SW where it had been removed in addition to further repair work	4	Comment, no measurement
1992	Sewerage works - 'big sand loss since then'	2	Comment, no measurement
1992-94	New sewerage pipes	2	Comment, no measurement
1993	Groyne replaced and repaired ?	2, 4	Comment, no measurement
1993/94	Building of new sewerage works East Beach sewers started October 1991. Works on the beach were completed 1993(?) Work at Woodbush Pumping Station (not on the beach) continued until 1994(?)	2, 10	Comment, no measurement
Late 90s	Beach shows signs of deterioration and damage to structures and walls	1	Comment, no measurement
1998	Reduced sandy beach	2	Comment, no measurement
1999	Winter storm sand loss	2	Comment, no measurement
1999	36m of groyne reconstructed at seaward end (approx. 35% of total length)	4	Comment
Sep 1999	Beach survey	4	Comment, no measurement
Mar 2000	Large step in sand at base of wall after storm and beach survey	4, 9	Comment, no measurement
1998-2000	Groyne damaged and major sand loss	2, 4	Comment, no measurement
Jan 2001	Estimate prepared for repair/remedial work to remaining 65% of groyne (boards are moving up and down), no work carried out to date	4	Comment, no measurement
July 2001	Sand levels high at back of beach against wall and obscuring steps at eastern end	3	Comment, no measurement
July 2001	Exposed manhole cover 0.5m max. above sand level in front of Lamer Street	3	±.2m (ABP Research Field Survey Photographs)
July 2001	Beach now 2m below level in 1980 when residents could 'Step off balconies onto beach'	3	Comment, no measurement
July 2001	Sandy beach up to exposed sewerage pipe indicates width of beach is approx. 32m	3	±1m (ELC Ground Level Survey Drawing)
July 2001	Groyne dilapidated with an absence of sand either side	3	Comment, no measurement
Aug 2001	Beach survey	4	Comment, no measurement
Sep 2001	Concrete ramp damaged after storm	9	Comment, no measurement
Sep 2001	Beach survey (after spring tides/storms)	4	Comment, no measurement
2001	Most people indicate building erosion in central and west portion of beach and rear	2	Comment, no measurement
2001	Large amount of damage in last few years while groyne damaged	2	Comment, no measurement

Date (s)	Event/Change/Observation	Source	Uncertainty in Measurement (where given)
2001	Some people say beach not changed much in last couple of years	2	Comment, no measurement
Last 50 years	Eastward movement of sand while groyne built/broken to build up southern end of East Links Road. Used to be less sandy and more rocky	2	Comment, no measurement
2001	Most sand loss Dec.-Apr. corresponding with building erosion (Feb.-Apr.) i.e. Winter/Spring months	2	Comment, no measurement
2001	Sand loss all over the beach particularly at back	2	Comment, no measurement
Unknown	Took away breakwater (When and Where?) and added building rubble to beach	2	Comment, no measurement
Unknown	Less sand since blocked entrance to old harbour (When?)	2	Comment, no measurement

Key to Table 1 sources:

1. Public Consultation, 2001. Dunbar East Beach Public Consultation. Interim Report: Pictures and maps brought by local people. May 2001.
2. Dunbar East Beach Public Consultation. 2001. June 2001.
3. ABP Research Field Survey photographs. July 2001.
4. Hutchison, 2001. Discussions/notes from Murray Hutchison, ELC, October 2001.
5. Aerial photograph 1946
6. Aerial photograph 1973
7. Aerial photograph 1980
8. Dunbar Lamer Street East Beach. Selection of photographs, May 2000 – September 2001.
9. Monthly Progress Meeting 15/10/01.
10. Jim Gray, East of Scotland Water, pers. comm. Jan. 2002.

Dates	Event/Change/Observation	Source	Uncertainty in measurement
2002 - 2009	Beach regenerated itself with no interventions at all.		
November 2009	Sandy beach with sand running all the way out and round the old groyne point. No sand at groyne line but sand running through the high shore gap in the groyne. Groyne in poor state of repair with 3 + 3 sections at top of beach in position. Pipelines not visible	Photos, resident account	None
30 March 2010	Extreme storms along whole coast. Flooding into gardens and onto road. Beach sandy both before and after event. Groyne damaged further.	You tube, resident account	None
2011- 2012	Sand levels rising and falling by as much as 1 - 2m in every tide sequence. Always self replenishing, both on East Beach and East Links.	Resident monitoring	None
1 January 2013	The New Year Dook took place on 1 January 2013 from a sandy East Beach.	Dated photos	None
May 2013	Surfers Against Sewage and Barefoot Wines hold a beach clean day. Broad sandy beach	Dated photo	None
Dec 2013 – Feb 2014	Wettest winter on record. Severe sequential storms throughout UK, the worst for 20 years.	Met Office	
1 January 2014	New Year's Swim. Beach sandy but with some sign of beach cobble mixed in.	Dated photo	None
Spring 2014	Significant storms. Beach denuded and campaign starts to find solution to beach degeneration.	DSHNG records	None
Spring/ Summer 2014	Still possible to clear kelp dumps from beach using tractor and trailer from Cromwell harbour end. Some make up of 'roadway' required at bottom of slip	DSHNG records	None

Dates	Event/Change/Observation	Source	Uncertainty in measurement
August 2014	Main sewer interceptor pipe visible but sand lying roughly level with top of the pipe to landward side. Well below crown to seaward side	Dated photos	None
October 2014	DCC Minutes record that urgent work is required to 'make the pipeline more attractive' and address kelp removal. Only the main interceptor pipe was visible.	DCC minutes	None
December 2014	Severe winter storms. Beach denuded and pipes fully exposed	ELC Flood records	None
1 January 2015	East Beach unsafe for New Year swim. Swim moved to East Links	DSHNG noted	None
May – December 2015	Main interceptor Pipe fully exposed. Large kelp dumps. Shore rocky. Periodic kelp fly infestations in cobbles.	Dated Photos	
1 January 2016	East Beach unsafe for New Year swim. Swim moved to East Links	DSHNG noted	None
2016	DSHNG, DCC, ELC and Dunbar and East Linton Area Partnership commission work by RHDHV to advise on: Groyne replacement, beneficial beach recharge, mattressing to interceptor pipe.	Minutes	None
July – August 2016	Sand begins to slowly accumulate adjacent to lower interceptor pipe. Calm weather over prolonged period.	Resident record	None
13/14 January 2017	Swell and high tide resulting in further degradation of material. Up to 1.5m reduction in levels. Ramp access undermined/collapsed.	Resident Record	None
Summer 2017	Sewage Interceptor pipe protected with rock armour. Rock armour to base of sea wall	EBRG Record	None
2017/18	Continued degradation but perceptible change in wave movement on beach, moving material to south	EBRG	None
Spring 2018	3 separate collapses to Lamer St at Amusement Arcade. Large voids filled below road. 'Radar' survey carried out. No significant additional voids detected (ELC)	EBRG	None
May/June 2019	Aggregate levels further eroded at north end after heavy but not stormy seas. 800mm drop from ramp to shore.	Resident Record	
July 2019	Cracks appear in sea wall below Amusement Arcade and sea wall undermined. ELC instructed repairs to base of sea wall. Monitoring drill holes placed at 2m nom distance along length of East Beach at Lamer St.	ELC/EBRG	
April 2019 onwards	Significant sand build from south to north, east of Woodbush Brae slipway and round rock peninsula. By August, sand to marker rock, building at about 2m a day.	Resident Record	None
to June 2020	Sand continuing to build. Sand right up to wall and level with interceptor pipe at south end. Breakwater and Groyne works commenced March 2020 but stopped within days due to Covid19 outbreak.	Resident record	
2020	New groyne and breakwaters constructed to form false harbour.	Resident record	
2021-2023	East Beach rapidly regenerated, becoming fully usable as amenity beach. Problems with timeous kelp removal remain a problem but no significant fly infestation.	Resident Record	
October November 2023	Sequential storms appear to significantly damage the breakwaters. Storms remove vast quantities of sand. Major road collapse at Lamer Street outside Coastguard Houses	Resident Record	
2024 – 2025	RHDHV Engineers confirm that there is no significant loss of mass/height from breakwaters. Beach continues to erode resulting in complete degradation of beach with entire loss of amenity. Lack of robust kelp management plan resulting in chronic fly infestations in 2024. Lack of robust kelp management plan in 2025 persists	Resident Record	
Summer 2025	A failure to timeously remove kelp in the spring resulted in a whole summer of composting weed on the beach. Complete loss of amenity.	Resident Record	