

Table A - Pagham Harbour-History of Human Intervention to Natural Processes
(Figures 3 and 4 refer).

Year	Coastal Processes	Interventions	Present Status
1587	Two separate shingle spits	None evident	No longer applicable due to interventions
1672-1785	Southern spit has formed	ditto	
1724	Southern spit grown by up to 90m	ditto	
1778-1785	Reclaimed land, defences and sluices built	First evidence of interventions	Unknown but reclamations likely to persist
1825	Ferry causeway constructed	Within harbour area	Not significant
1874	Spit lies further landward	None apparent but some training of the inlet channel possible.	
1876	Inlet artificially closed	Pagham Lagoon (9ha) reclaimed from old harbour outlet channel.	Remains reclaimed.
1876-1910	Pagham beach extends seawards	Due to inlet closure and movement of delta sediments onshore.	No longer relevant
1910	Shingle ridge breached		Previous reclamations flooded and likely to have remained flooded. Breach location shown on Drawing C.
1930's	Properties built	No immediate influence on the harbour and spit system due to property setback from the beach.	Property still located above high water but now with coastal defences to prevent property damage.

1910-1934	Spit grew by 700-800m northwards	None evident.	
1934	Two separate shingle spits		Similar behaviour to that shown schematically on figure 2(I)
1937	Man-made breach of spit near Church Norton	Location shown on Drawing C. Appears to have been located as far south-west as possible presumably in anticipation of north-easterly migration over time. No evidence of any training works.	No longer relevant.
1944	Mid-point entrance of old spit filled in and forms small lagoon	Not clear if this was near the 1910 breach location, which was still functioning as an outlet to the harbour at this time or simply a low area vulnerable to breaching.	Small lagoon linked back to the outlet channel in 2020.
1944	Concrete and sheet piles	Assumed to be training works to the outlet channel.	No longer relevant.
1955	Spit beached by a storm		Over wide (800m) frontage extending from the 1937 breach location north-east to around the present training wall creating a wide harbour entrance.
1961	Church Norton spit extended		Harbour entrance narrowed to 250m
1950-1969	Inlet has migrated 900m north		
1963		Training wall completed fixing the	Remains in place and active to present (2021)

		distal end of Pagham Spit further to seaward than had occurred previously. Harbour entrance annual removal of shingle commenced around 1960 and continued to 2004. Four groynes constructed in front of the properties along Pagham beach frontage.	
1978	Harbour entrance reduced to a narrow gap between two shingle spits reminiscent of historic configurations except now with the active restraint of the training wall at the distal end of Pagham Spit		
1980's		Training wall rebuilt after collapse of previous structure but understood to be at same location	Remains in service.
1969-1997	Area remains relatively stable		
1990's		NRA annual removal of shingle/ taken over by EA	Ceased in 2004.
2004	Church Norton spit accreting naturally	EA ceased annual removal of around 15,000m ³ of shingle from south-west side of harbour entrance.	Remains discontinued.

2003-2005	Church Norton spit fairly static, single inlet to harbour, delta well developed	Stability likely to be linked to effects of removing 15,000 m ³ /year back to the south-west which only ceased in 2004.	Annual shingle removal ceased in 2004.
2005-2009	Church Norton spit grows rapidly NE	Spit develops across the mature delta surface established since 1969.	
2009	Spit direction change at distal end	Caused by fixing of distal end of Pagham Spit by training wall – otherwise this distal end would have recessed to the north-east in unison with the growth of Church Norton Spit to the north-east.	Approximate location of breach in 2016 with spit development recommencing after further inshore and relocating the spit change in direction by 2020.
2009-2013	Harbour inlet forced closer to Pagham beach	Caused by the change in direction of Church Norton spit development setting up a meander in the harbour inlet channel. Shingle recycling undertaken to try to restore satisfactory beach levels in front of the properties behind Pagham beach.	
2012/13	3 storms erode Pagham beach	Harbour outlet channel now interacts with coastal defences changing flow patterns and resulting in movement of the channel outlet delta further offshore.	
2013		Local rock armour revetment constructed	Not in active service with higher beach levels present in

		along exposed property frontage at Pagham beach	2021.
2014		Further rock revetment works and groyne strengthening works to protect the properties along Pagham beach frontage.	
2016	Church Norton Spit breaches naturally near where the spit formation changed direction in 2009.		
2017	Natural breaching of the spit exhibits instability and broadens to the south-west opening a 350m wide harbour inlet whose south-western edge is approximately at the site of the proposed artificial breach proposed in 2021.		
2020	Church Norton spit redevelops but now closer inshore restricting the gap between the spit and the training wall and relocating the spit change of direction so that by 2021 the erosion of Pagham beach was threatening the sluices to the Pagham Lagoon.		