



EUCC - France

What is the good strategy to face present and foreseeable damage?

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Wissant (Pas-de-Calais)



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Present state appraisal

Wissant, with its beach, seafront promenade and dyke, is a key element of the « Grand Site National des 2 Caps » (Capes Blanc Nez and Gris Nez). The town is at the bottom of a sandy bay which is widely exposed at low tide, thanks to a tide-range exceeding 8 m. The west part of the bay is bordered offshore with a shallow sand bar (« banc à la ligne ») stretching out from Cape Gris Nez. Widespread peat outcrop testifies to the sand depletion in the western and central part of Wissant Beach. Since the eighties, the beach width severely reduced at high tide; at the same time the beach level lowered so that the pile planks are presently exposed and dyke is seriously threatened. The dyke was destroyed in 2000-2001, and then reconstructed with identical high gradient in 2002.



October 2001: after storm events



October 2002: reconstruction



March 2006: new threat to the dyke

The first stop was at the top of the “dune d’aval”, south of the town. Participants could see the fast retreat of the coast attested by the remnants of the Atlantic Wall which were commented by P. Lanoy-Ratel. The last century history of the beach was presented. The policy of the “Conservatoire du Littoral” and management strategy of EDEN 62 were discussed. The strong erosion of the “dune d’aval” contrasts with the progradent shoreline and growing “dune d’amont”, east of the town.

Complexity of the morphological and sediment system in Wissant Bay

The evolution of the bay has changed with time and varied from one place to another. For example, during the last World War, the beach in front of the dyke and “dune d’aval” was sanding up while the “dune d’amont” and eastern beach were eroded. Complex processes were confirmed by the studies undertaken by the University of Dunkerque (ULCO) and CETMEF. According to them, Wissant Bay works as an open sediment-deficit system and the very low beach-level at the foot of the dyke encourages the sand to be drifted out to sea.

The sea-bed strongly deepened from 1977 to 2002 between the coast and “Banc à la ligne” sand bar (Aernouts and Héquette, 2006). It could explain higher coastal erosion in the central part of the bay. Nevertheless some points are still uncertain: What is the amount of exported sand and how is it drifted out the bay? What is the role of Boulogne Harbour pier in the sediment deficit of Wissant Bay? How to explain the complete trend reversal of Wissant Beach and dunes in the last sixty years? The change took place at the end of the seventies. What is the role of aeolian dynamics in this coastal system?

Possible solutions

They were carefully debated in the field and during the talk the day after.

What is at stake? Marine erosion threatens the seafront of the town (dyke and houses). The beach disappears at high tide. At low tide, access to the beach and moreover from the beach to the promenade might be impossible due to the difference in level between the beach and last step of the stairs, so that the safety of beach users is not ensured. Yet Wissant is one of the most visited sites in the North-Pas-de-Calais Region.

As usual, there are three different ways to answer:

- 1) Hard defence with dyke and rip-rap strengthening in front of the “dune d’aval” and west part of the beach. It is known from experience that this type of intervention does no more than making things worse. It will increase seaward drift of the upper beach sand during storm events.
- 2) Laissez-faire: dune, dyke and sea-front houses will be no more protected against sea erosion. This solution was supported by some participants who pointed out the exorbitant cost of protection compared with the value of threatened property. Another argument was defended: in case of laissez-faire, a new beach-dune system would reform by dint, to tell the truth, of the disappearance of the present sea-front. To say the least, it would be necessary to prepare public opinion to this evolution within 20-30 years and study every possible consequence to the landscape of this “Great National Site”.
- 3) Environmentally friendly defence: the solution would be nourishment of the beach in front of the dyke and “dune d’aval” with sand taken from the entrance of Calais Harbour. A study was carried out by SOGREAH but it was not yet divulged on the workshop day, so that the necessary amount of sand, exact emplacement of deposit, nourishment durability and cost of the operation were unknown.

The Wissant case is significant of many other beaches and sea-resorts which are presently threatened by marine erosion. Solutions have to take into account the people mentality. In case of costly operations, the financial responsibility is not evident: threatened property owners, local, regional and State authorities are all concerned but keep passing the buck...

The “Conservatoire du Littoral”, EDEN 62 and the Wissant city council already took some protection measures in front of the “dune d’aval”: wooden pickets and fences were set up at the foot of the dune before the last summer. It’s essential to monitor the site to evaluate the efficiency of these structures to trap sand on the upper beach and protect the foredune.



A general view of Wissant Bay from the “dune d’aval” to the east. Cape Gris Nez in the background. Remnants of the Atlantic Wall (bunkers and antitank wall) are seen in the middle. In the foreground, the sand cliff is now protected with wooden pickets.