

### SCOPE

Substrates: marsh, mudflat  
Pollution: all types  
Pollutant: fluid to highly viscous  
Sea: with or without tides



*Solid stone dam*



*Earthen dam with flap gates*

### EQUIPMENT NEEDED

Basic equipment:

- Sealing materials
- Flap gates

Extra equipment:

- Power shovel, crawler power shovel

### DESCRIPTION/PRINCIPLE

Consists of blocking off a channel to prevent marshes or more frequently productions basins from being polluted (salt production, oyster farming etc.). Closure affects the whole water course.

Channels are sealed off using various types of materials (mud, earth, stones etc.). The type of device varies according to the kind of channel and the resources needing to be protected. Complete closure is a possibility, but a boom with flap gates is generally preferable, especially on sensitive sites of ecological interest or economic importance (aquaculture).

These systems are high maintenance (to ensure durability and when removing the trapped oil and oiled materials).

### CONDITIONS OF USE

Pollution: pollutants of all viscosities

Substrate: load-bearing embankment

Site: marsh

### IMPACT ON THE ENVIRONMENT

Physical: temporary modification of hydrological conditions; possible creation of some turbulence here and there depending on current speed and the size of the water course and the flap gates.

Biological: (case 1) alteration of local water conditions (immersion, salinity); risk of flooding behind the closure in the case of complete sealing during periods of heavy rainfall or spates; obstructs the movements of fish.

### PERFORMANCE

Yield: N/A

Implementation: variable depending on the type of protection (as in the case for maintaining the protective structure and recovering the oil).

Waste: pollutant, polluted debris and oiled materials.

### OBSERVATIONS

- Effective on fluid to very viscous pollutants.
- Complete closure (without flap gates) cannot be envisaged for more that 5 or 6 days without leading to a risk of ecological impact in the marsh due to permanent immersion and decreasing salinity which can be harmful for flora and fauna.
- A dam with flap gates can be costly in aquaculture production zones (fragility of jetties, unique use of marshland, accurate sizing of flap gates so as not to damage the immersion-emersion cycle, need for a specialised company).
- Presupposes daily maintenance (systematic removal of pollutant and blocked debris).
- Closure materials can be pre-positioned before the pollution arrives.