Summary of possible effects of options on coastal and riverine recreation and amenity

COASTS

DO NOTHING OPTION

Beaches

- Changes in beach composition: e.g from sand to coarse material such as pebbles affecting the suitability of the beach for childrens play, for sitting and for walking.
- Changes in beach profile: as a beach steepens its value for walking, sitting and lying will be reduced.
- Extend of beach at low and high tide: as a beach flattens with erosion, beach will be exposed for less time at low tide and less of the upper part will be exposed at high tide or access to the beach may become impossible.

Promenades, seawalls and groynes

- As a beach is lowered by erosion or as a result of flooding, the seawall may itself become undermined or damaged.
- Where the beach has become lowered by erosion, there may be a steep drop or steep steps from the seawall to the beach making access inconvenient or unsafe.
- Damage to the seawall may make the seafront appear dilapidated and visually unattractive.
- With undermining, slumping and collapse, promenades and seawalls may become dangerous and access may in extreme cases be restricted or closed altogether.
- Damaged groynes may initially appear unattractive and may thus reduce enjoyment. Eventually the dilapidation of the groynes may present a hazard to beach visitors.
- Lowering of beaches may make access over groynes difficult or hazardous. With long shore drift, different levels of beach material may build up on either side of groynes creating a further potential hazard.
- Erosion or flooding may damage or destroy access facilities for specialist users such as ramps for boat launching.

Cliffs

- Erosion of unprotected cliffs may result in large pieces of material falling onto the beach below making the beach unsafe.
- Increasing cliff top erosion may make the cliff edge unstable and dangerous. This may result in access to the cliff edge and views being restricted.
- Erosion may result in the reduction of the cliff top area available for recreation. This may be significant where the area is restricted or used for special recreational purposes such as golf courses.
- Where cliff top footpaths such as long distance routes cannot be moved back but have to be diverted inland, there will be a loss of amenity and recreational enjoyment
- Erosion or flooding may damage or destroy access steps or ramps from cliff top to beach or seawall resulting in restrictions on or closure of access.

Other types of coastal area

- Erosion to sand dunes is likely to result in restrictions to access.

- Although saltmarshes may be less used for general recreation they may attract specialist users and erosion or flooding of saltmarshes may result in restrictions or loss of access for bird watchers or walkers.
- Freshwater sites and land behind coastal defences with important recreational or environmental uses such as the Norfolk Broads or Cley marshes may be threatened by erosion and flooding from the sea (Bateman *et al.* 2001).

DO SOMETHING OPTIONS

- Different techniques for coastal protection and sea defence have different effects on coastal recreation and techniques may well be perceived differently depending on visitors experience and views.

Beach nourishment

- Beach nourishment may simply reinstate a beach to its pre erosion condition or it may enhance the condition and recreational enjoyment of the beach. Such enhancement may only be allowable for central government grant aid where it it is an integral part of a coastal protection or flood defence scheme.
- Where nourishment is from outside sources rather than from recycling of material transported off the site, then there may be the opportunity change the nature of the beach material from a mixture to a purely sandy beach thus potentially enhancing recreational opportunities.
- Beach nourishment is likely to increase the height of the beach, thus the amount of beach exposed and available for recreation at high tide and reducing the drop from seawall to beach and attendant hazards.
- The effects on recreational use and enjoyment of beach renourishment can range from extreme disruption in the short terms where major engineering works are involved (as in the case of Hastings) or minimal disruption where small scale works can be carried out outside the main tourist season. Where there is year round recreational use of the site as at Hengistbury Head, annual works even over the winter season may be seen as disruptive of recreation.

Conventional and fishtail groynes, seawalls and off shore reefs

- Groynes, apart from their benefits in retaining beach material and thus enhancing beach recreation, can be seen as beneficial in themselves, providing support for those sitting, shelter from the wind and containment for children Penning-Rowsell et al. 1989; 1992).
- There may also be opportunities to create walkways for strollers and anglers on top of rock groynes.
- Groynes and seawalls may however be seen by some as intrusive and as detracting from the 'natural' appearance of a seafront.
- Response to groynes and seawalls may also depend upon the material from which they are constructed (see Hengistbury, Cliftonville and Corton studies). However, responses appear to vary and while some may perceive rock armoured groynes and seawalls as potentially hazardous, restrictive of access and traps for rubbish, others do not.
- Structures such as fishtail groynes and offshore reefs have the potential to create new recreational opportunities for water based activities such as angling and sailing or boating by providing access to the sea and also shelter.

- The introduction of new recreational activity such as boating or angling may enhance the enjoyment of other users of the seafront through watching these activities. However, this may result in a conflict between existing users and potential new users
- Seawalls seldom have any direct benefit themselves but promenades upon them can add another dimension to the recreational experience at the sea front and allow access there to pushchairs, wheelchairs and cycles. Protective seawalls along the base of cliffs similarly may introduce a new recreational feature and enhance access.

Cliff regrading

- This may offer the opportunity for creating an amenity walkway enhancing access and the range of users of the cliff top.

RIVERS

DO NOTHING OPTION

- Flooding along rivers will usually cause only a temporary loss of recreation and amenity to those using rivers and riversides for recreation. The erosion of undeveloped river banks usually can be overcome by routing riverside paths a little further inland. Many riversides do not attract large numbers of visitors apart from those in busy town parks, city centres and country park settings. Thus, usually there will be too few visitors and recreation benefits to justify protecting undeveloped riverside sites although preventing damage to recreation might be an additional benefit where there are other direct damages to be prevented.
- Where access along the river is restricted to a narrow corridor as was the case at Branbridges and Oak Weir along the River Medway (Tapsell et al, 1998), erosion can make paths inconvenient or dangerous to use and threaten public access.
- Flooding of some specialist riverside recreation areas may damage facilities such as golf courses, boating facilities,paths and playing fields making them unusable or less enjoyable.
- Erosion of river banks may pose a threat to navigations and boating recreation.

DO SOMETHING OPTIONS

- Where flood defences have to be renewed or flood defence standards raised, or where new defences have to be installed, for example, with new development or redevelopment, there may be associated recreation and amenity benefits through:
- a new flood relief channel, for example the new Jubilee River in Maidenhead;
- new flood retention ponds, lakes and wetland areas offering amenity and a new recreational resource;
- replacement of 'hard engineering' with 'soft engineering', river rehabilitation;
- raised or improved flood banks offering enhanced views over and better, safer access along rivers.