

case at Cape Canaveral. A series of two or more headlands spaced closely enough to act as a system will cause formation of embayments that are more semi-circular in shape.

The role that a headland or series of headlands will play in modifying shoreline response to sea level rise will depend on the amount of incident wave energy dissipated or reflected by the headland(s), and the aspect ratio (ratio of width to length) of the embayment(s). Those with broad faces parallel to the coast block significant amounts of energy, and their embayments have larger aspect ratios. This means they significantly increase the length of shoreline available to "resist" a given amount of wave energy - the amount being controlled by the fixed distance between headlands. Because of the reduced energy density at the shoreline, less of the potential erosion takes place as sea level rises. This situation is analogous to the performance of offshore breakwaters. However, narrow headlands do not block significant amounts of wave energy and although the shoreline in between may be reoriented, it is not lengthened substantially. Because the energy density at the shoreline is not reduced, little is done to affect on/offshore transport and therefore the full potential for erosion associated with a rise in sea level can be realized. This situation is analogous to a groin field, to be discussed subsequently along with offshore breakwaters.

An example of the effect of headlands on shoreline evolution is Wreck Bay on the west coast of Vancouver Island, British Columbia, shown in Fig. 6.4. Quisitis Point and Wya Point are two natural headlands responsible for the large embayment inbetween. Although historical shoreline changes for the bay are not readily available, the general behavior in response to future sea level rise is expected to be as described. Part of the erosive potential of the rise will be spent on lengthening the shoreline of the bay as it enlarges. So, the average retreat of the shoreline will be less than on the open coast.

6.3 CONSTRUCTED WORKS

Dikes and levees - are free-standing, elongated mound-like structures used to prevent coastal and riverine flooding and to create usable land from low-lying, previously inundated wetlands. They are usually constructed of earth or sand (armored by clay, asphalt, rubble or vegetation), masonry, and