SHORELINE EVOLUTION IN LAS CANTERAS URBAN BEACH (GRAN CANARIA, SPAIN)

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Abstract: Coastal ecosystems are places where converge biophysical and social processes. In this sense, natural and anthropogenic processes can have long-lasting impacts on coastal environments and fundamentally alter the evolution of the shoreline. The study of the shoreline and its evolution shows the habitats responses as it could be the surface behaviour of the beaches associated to natural or anthropogenic actions. This research analyses the shoreline evolution of a currently urban beach such as Las Canteras beach located in Las Palmas de Gran Canaria (Canary Islands, Spain), to know which areas are experiencing progradation or retrogradation. The Digital Shoreline Analysis System (DSAS) tool has been used as an extension to the ArcMap GIS program, which enables to calculate rate of change statistics from multiple historical shoreline positions. Results through this metrology shows that the beach does not behave in a homogeneous way since from the area of La Puntilla (north of the beach) to Playa Chica (central area of the beach) it has been able to recover certain meters of sandy coastline (progradation) while the rest of the beach, in La Cícer (south of the beach), suffers severe losses of coastline (retrogradation). On the one hand, it is discussed what natural and anthropogenic variables could be affecting the positive or negative evolution of the beach, and on the other hand, where shoreline progradation is obtained, if they would be potential areas for beach transgression towards the land (a process that would occur naturally) as a response to sea level if the urban density allows it.

Key words: urban beach, coastal processes, shoreline, DSAS, sea level rise, beach response.

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