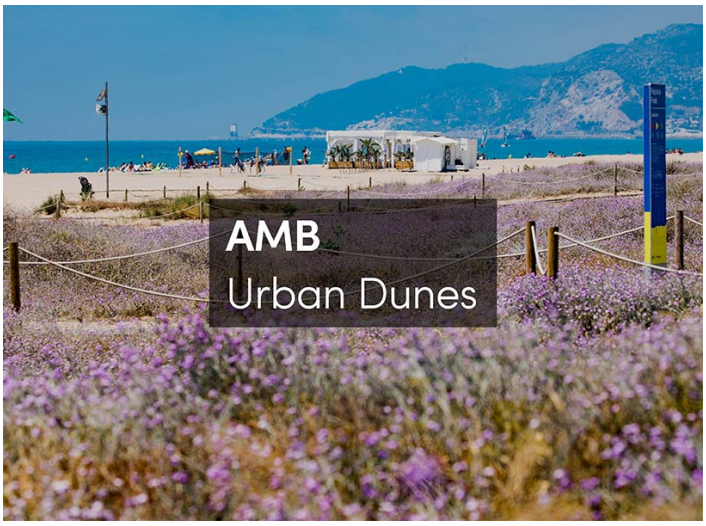

URBAN DUNES. METROPOLITAN BEACHES

Posted on July 29, 2022 by xavigonzalez

Categories: Barcelona Metropolitan Area (AMB), Contributors, Densities, Energy and sustainability, Formats, Low Density, Project, Public Space in Metropolitan Barcelona, Territory and mobility, Topics

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Dune areas are the sand reservoir of beaches. They are spaces for biodiversity and buffers against storm surge. The construction and management of dunes responds to the need to ensure that metropolitan beaches continue to exist, that they do not disappear due to the effects of the sea and erosion.

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For the natural construction of a dune, the wind must be strong enough to transport sand and marram grass (*Ammophila arenaria*), the plant species that helps to retain sand, must be present. On the Barcelona metropolitan coastline, the wind has not built dunes naturally for more than thirty years, although it still has the capacity to destroy those that already exist.

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The first step in the regeneration of dunes on metropolitan beaches is the protection of the dune areas by means of rope and pole closures; the existing dune fronts are then reinforced with sand movements and action is taken on the vegetation, eliminating invasive plants and planting native species.

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In areas where dunes have completely disappeared, the foundations must be laid to build new ones and ensure that they grow as a natural system. Since dunes built parallel to the wind are more likely to develop positively because they withstand less wind erosion, the beach is divided into different sectors according to wind direction. Once the position of the dunes has been decided, non-rectilinear and amorphous piles of sand are formed to allow the wind to shape their final form. Once the sand has settled, it is planted – buried to prevent it from slipping and to give it access to the necessary humidity – and protected with reed screens to give it time to build the dune.

Dune regeneration is a nature-based solution to reinforce natural systems to cope with extreme weather events such as easterly storms.

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