

Supplemental file 1. Extended methodology

Beaches by group

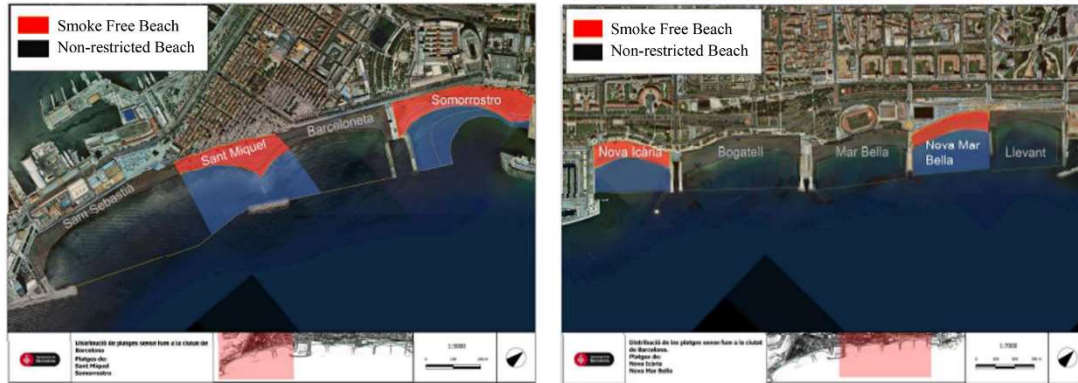


Figure S1. Beaches by group, from South to North coastline

Transect and stretch configuration to collect data (smoking people and cigarette butts)

Following previous studies, observations and interviews were carried out in specific pre-selected sections [26] of each beach. Two contiguous and perpendicular to the coast transects were defined and divided into 3x3 meter quadrants (Figure 2, yellow area). Beach technical staff had previously established the transects with the highest affluence of people. Each transect was geolocated and further identified with photographs and seafront balusters. Cigarette butt pick-ups were performed in an 1,800 m² area in one intervention beach (Nova Icaria) and in one comparison beach (Bogatell). Areas were distributed in six standardized and parallel to the coast sections of 100 m per 3 m (Figure 2, green area). The collection was performed by teams of trained civic entities on May 23 for the pre-intervention period; and June 20, July 25, and August 22 for the post-intervention period. Cigarette butts were counted manually. Results are presented as the number of cigarette butts by 100 m².

Beach: Bogatell

Latitude: 41°23'37.1"N

Longitude: 2°12'20.8"E



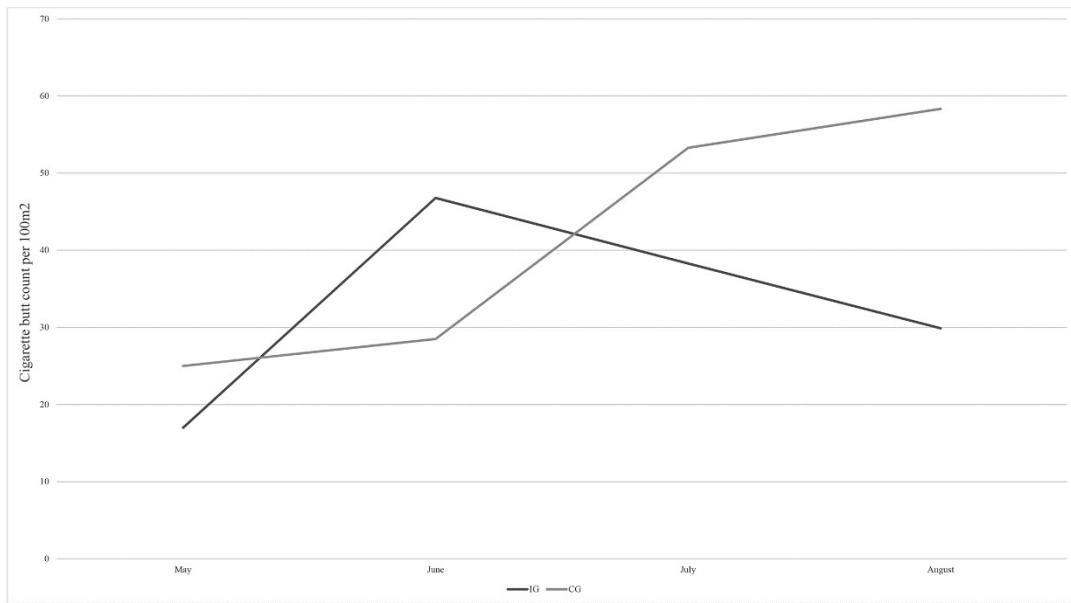
Figure S2. Transect configuration

Observation records

Observation teams recorded: a) the number of people on the transect, defined as the number of people sitting, standing, or lying with at least one part of the body within the transect quadrant, and b) the number of people smoking, defined as the number of people smoking, putting out or lighting a cigarette within the observation period of 20 minutes (with 5-minute intervals). We recorded the maximum number of people counted in each transect and quadrant.

Cigarette butts results

Since June, cigarette butts increased in the CG and decreased in the IG (Figure 3).



Note: IG: beach in the intervention group (Nova Icaria); CG: beach in the comparison group (Bogatell).

Figure S3. Number of cigarette butts per 100 m² by intervention group and month