

ACOUSTIC POLLUTION IN TOURIST COASTAL CITIES OF ANDALUSIA 2001-2010

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A novel investigation was carried out, the main goal of which was to assess and diffuse the alarming acoustic situation suffered in cities of Andalusia. We have attempted to innovate the traditional methods to measure and study the perception of acoustic pollution. Till now, such measurements were based on a series of excessively empirical physical variables that are not very useful to determine the problem of urban noise for human beings and its perception/impact on the population. We have thus developed some very interesting methodologies, universally applicable to any city, including a new model of mapping noise and acoustic pollution in our cities.

The present investigation has two parts. In the first part, we examined *«The state of the municipal legal normative concerning acoustic pollution»*, and the second part consists of the study of *«The acoustic pollution of the cities of Andalusia»*. This was carried out using three sources of data: variables from the Population and Housing Census concerning noise in 2001 (National Institute of Statistics), complaints about Acoustic Pollution made in the past ten years in the City Halls of the cities of Andalusia, and two surveys. One targeted the collective of urban Andalusian citizens over 18 years of age. And the other was carried out with an extensive collective of representatives of the professionals, technicians, and politicians involved with the topics of environmental noise in Andalusia.

The preliminary stage of our investigation, called *«The state of the municipal legal normative concerning acoustic pollution»*, in general, confirmed that the degree to which the legal requirements are met, although improvable, is acceptable.

With regard to the Study of Acoustic Pollution in the cities of Andalusia 2001-2010, the first stage, called *«Study of acoustic pollution through information collected in the last population census»*, was carried out with the data from the databases of the National Institute of Statistics for the last census, that of 2001. With this objective and reliable information, by means of a System of Geographical Information (SGI), detailed and meticulous municipal maps were made for each one of the 78 cities that make up the study (zoning the urban territory by neighborhoods, sections, and districts) of exposure to noise as a function of the percentage of homes affected by acoustic pollution. With an innovative methodology, the final results of which approximate the concept of a **«Noise**

Map of Andalusia», we can see a zoning of the urban Andalusian territory, based on the real exposure to acoustic pollution of the entire specific population of each particular census section, district, or neighborhood of Andalusia, and not in a certain value of the acoustic index, in decibels, as it has traditionally been determined with the use of audiometers.

The second stage addresses the «*Analysis of acoustic pollution through complaints about noise*», presented by citizens in the archives of their City Halls, which were used to study the municipal acoustic urban situation in Andalusia in a different way. From this other, more sociological, viewpoint, we carried out a territorial analysis of what could be called the «**acoustic impact perceived by citizens**». This was based on the presentation of complaints at their City Hall, which publicized the discomfort suffered as a consequence of the exposure to intolerable noise levels that have a direct impact on people's well-being and quality of life. Moreover, these complaints report, more or less precisely, the location of the street, neighborhood, or area where the acoustic transmitter that causes the perturbation is found.

The third stage consists of an urban psychosocial and environmental study of noise, through the opinions, perception, experiences, and mental representations of two important Andalusian collectives, such as the urban citizens of Andalusia over 18 years of age and a large representative sample of Professionals, Technicians, Administrative Managers, and Politicians involved with Andalusian acoustic urban impacts. By means of a modern and extensive system of sampling and surveys, they have provided us with a broad range of data about the noise experienced and suffered in Andalusia in the past ten years. Such information is far beyond the many technical reports, or physical measurements from studies of audiometry and acoustics of the diverse nuclei of contaminating emissions (maps of noises in large cities), but which do not take into account the viewpoint of what is perceived, felt, and experienced by the diverse Andalusian agents and social urban collectives.

The fourth stage consists of another important technical and methodological novelty, based on the modern cartographic bases of street maps and neighborhoods of the 10 most important and largest cities of Andalusia, kindly provided by the *Andalusian Institute of Cartography*. With these maps, we have linked the locations of the acoustic transmissions (complaints) and represented them on an S.G.I. by means of an interactive street map, and related them to the neighborhoods of each city in order to publicize on a map the acoustic situation of each neighborhood as a function of the complaints in the diverse streets or areas, across the 10-year time series provided by each City Hall. We are now in the stage of carrying this out in the rest of the large cities of more than 50,000 inhabitants.