Renaturalisation

This term is at present used in the spheres of urbanism, architecture and nature conservation. "Renaturalisation" (or ecological restoration when it is planned), is a process of modification of a portion of space, a built up area, a block, a quarter, a plot, a landscape or a territory, via the extension of occupation by natural elements – flora, fauna, surface water flows, morpho-dynamic activity etc. This mutation can, however take on different forms. It may concern a spontaneous ecological process following the encroachment of a portion of space by human activity, or it may be an deliberate action on a Â«landscapeÂ» that has been artificialised in some way, in urban and industrial environments and also in numerous rural spaces, such as the former polders that have now been returned to the sea.

In the first instance, renaturalisation is an ecological process following on from a phase of anthropisation or artificialisation, as for instance in the case of abandoned brownfield sites. In the second, there is a development project, particularly in urban settings, aiming to provide for a participation of natural elements in the overall effect, or indeed for a contribution to the functioning of the urbanised system, from buildings to city districts and cities as a whole. For rural spaces, the aim is to address two issues deriving from the regression of cultivated spaces, especially in Europe, and from the environmental crisis, leading to either a reduction in habitats, or to the increase in natural hazards, such as the rise in sea levels and the risk of submersion. In these last two instances, renaturalisation, or ecological restoration, tends to be incorporated into public nature conservancy policies.

At the heart of the process of renaturalisation there is the question of what is meant by "nature", and there is an apparent contradiction in the process of "renaturalising". On the one hand, it can be seen as a spontaneous evolution accompanying the abandonment, relinquishing or marginalisation of a space, a territory, a landscape or even buildings and infrastructures. It can be symbolised in positive manner by the Angkor monuments, or more negatively by industrial brownfield sites (Muratet et al, 2007). In certain cases reference is made to "wild" nature or "wilderness", reappearing following the abandonment of human developments or settlements. In other cases, it is in contrast a fully controlled process, intended to be part of a development approach choosing to place "nature" or natural elements inside artificialised environments, even in dense city areas. This process is fully underway in most large cities, where it has a prominent place in planning policies for "sustainable" cities.

-From the renaturalised space with its tensions....

Spontaneous renaturalisation is referred to when spaces formerly devoted to human activities, in particular agricultural, but also industrial, are abandoned. The withdrawal of agriculture characteristic of the European countryside from the second half of the 19th century, and its acceleration after the second World War alongside the rural exodus, has translated into a closing of landscapes. In place of cultivated and grazing areas, scrub, moorland and forest have developed. This closure has been materialised by an extension of wooded landscapes at the expense of crops, meadows or grassland. The renaturalisation can be seen from the scale and the age of the forest encroachment, and from the traces of former developments such as terraces supported by stone walls, or reminders of former agricultural productions in the form of certain plant species such as vines or fruit trees. In certain cases, there is a return of wildlife, including large predators such as the wolf in France, confirming the renaturalisation. Various studies, among which that by Isabelle Mauz, show how these trajectories are not well viewed by the local populations, who feel that this return to nature and to wilderness is a loss of their identity. Much the same applies to urban brownfield sites. Their spontaneous renaturalisation takes the form of colonisation by different plant species, and the rise in populations of animals often viewed as being invasive or nuisances.

These spatial dynamics of renaturalisation are largely governed by competition between spaces especially those who are no longer attractive – for instance when the renaturalisation is not sought after . However, a study on the evolution of landscape types in Europe between 1990 and 2006 using the CORINE LAND COVER database (Hatna & Bakker, 2011) made it possible to show that the abandonment of arable land in Europe did not concern marginal, under-populated, and economically underprivileged area, but rather areas undergoing major change, close to urban areas and transport infrastructures (Penone et al, 2012). In Europe today, the abandonment of rural areas has ceased, and the abandonment of agricultural land is more pronounced in areas of greatest density and activity: near cities, while there is an intensification of food supply zones for the urban markets, there is a concomitant development of abandoned or renaturalised spaces.

-.... to the renaturalised space that is a rehabilitation of anthropised environments

Contrasting with these processes of spontaneous renaturalisation accompanying the marginalisation of abandoned spaces or spaces undergoing severe competition, two voluntary processes of renaturalisation can be seen, one characteristic of planning policies for rural areas or areas with sparse human occupation, and the other found in urban planning policies. In either case, renaturalisation is part of a project, and not an uncontrolled dynamic following on from the abandonment or decline of a space, or an effect of competition.

The creation of the aesthetic reserve of Fontainebleau in 1856 seems to be the instance of the creation of protected natural spaces (Mathevet, 2012), in an area of heavily exploited environments. Ten years later, Yellowstone national park exemplifies a compensatory approach via the creation of a natural "island" within an American space undergoing rapid change. In the course of the 20th century, it is indeed the idea that there was a need to instate protected areas to enable the development of the natural environment that gained ground, with natural parks and reserves created in areas with previous developments (in France, Fontainebleau or LubÃ©ron, and numerous transborder parks, in particular in Africa). In the area of nature conservancy (Mathevet, 2012), European public policies, relayed by member states, aim to enhance the most unspoilt natural areas to preserve species, ecosystems and habitats as reservoirs of biodiversity, and to protect landscapes. In France the Grenelle de l'Environnement set up "green and blue" grid, defining ensembles that are reservoirs of biodiversity, with focus points for the preservation of genetic diversity, and "corridors" enabling mobility for fauna and flora. Any type of development, in particular any large infrastructure (quarry, high speed rail track, motorway etc), is required to elaborate a diagnosis, with compulsory avoidance, reduction, or compensation for any impact on spaces with conservation value. Compensation generally entails a process of renaturalisation, which may include the creation ex nihilo of natural environments that are equivalent to those destroyed to make way for the infrastructure.

In cities or on brownfield sites, spontaneous renaturalisation is increasingly apprehended as creating new ecosystems, interpreted as islands of biodiversity in the urban fabric (Muratet et al, 2007). In certain cases, intensely exploited environments such as quarries or gravel pits and subsequently abandoned are converted into nature reserves, such as that of Saint Quentin en Yvelines, now converted into Â«wetlandsÂ» , with a large ornithological conservation potential (Pech, 2013).

In an integrated approach for water management, public policies, in particular in the wake of the European Union Outline Directive on water, aim to establish water quality, measured by physical, chemical and biochemical properties. This integrated management also concerns landscape quality, with the restoration and preservation of wetland ecosystems, and the renaturalisation of hydrodynamic systems, including geomorphological aspects. This can entail the re-profiling of meanders, or the destruction of mill leads, dams and other constructions intended to slow flows and warm aquatic habitats, which does not favour aquatic ecosystems. This process of renaturalisation also has a part in the management of spates and flooding.

In urban planning, renaturalisation is still often apprehended as a form of landscaping. It is then deployed without establishing links with the natural geographical setting, or the "blue and green" grids, and this can end up with the introduction of exotic species where the sole purpose is to create a decorative effect. The "natural" object created in this manner is not autonomous, and is often costly in terms of irrigation, energy and inputs (fertilizers and pesticides, which are often pollutants). The archetype of this sort of renaturalisation in urban areas is the "green wall", or vertical garden, developed for the aesthetic effect, or even for advertising purposes. It is, in contrast, by way of a new conception of urbanism that the sustainable city should integrate natural elements, redefining what is "natural" by its ability to support itself, as a result of its biodiversity, and its natural cycles (carbon, water, oxygen, nitrogen). This sort of "nature" is coherent with the parameters of the natural environment, including urban environments (Hubert-Moy et am, 2011). This is all the more justifiable because this type of renaturalisation has "ecosystemic" usefulness: reduction in flooding by drainage, purification of runoff water, capture of urban dust and particles in the plant cover, trees in particular, and moderation of temperatures in the green zones and wetlands, able to release the heat stored during the day or increase the humidity or coolness of the air in case of heat wave. Certain objectives of renaturalisation are closely linked to social rehabilitation objectives, or integrate into strategies for the improvement of well being for the staff of a firm or a social group. The renaturalisation of urban spaces in the form of allotments is also a means to create social links in underprivileged urban settings (Les Ulis, Montpellier, Saint Denis etc). Renaturalisation projects can entail radical transformations of the urban landscape (Clergeau, 2011).

Renaturalisation thus corresponds to an range of different spatial dynamics that result from processes of segregation or even marginalisation, or on the contrary from processes of protection or rehabilitation that accompany planning strategies with strong environmental undertones.

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see also: Â«anthropizationÂ»

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