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Towards Biological Restoration of Tehran Megalopolis River Valleys- Case Study: Farahzad River

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Tehran is located in northcentral parts of Iran on the alluvium of southern Alborz Mountains. Seven rivers originated from the highlands of N Tehran run inside and around the city. Many of these river valleys have been deformed by a variety of urban utilizations such as garden, building, canal, park, autobahn etc. Tehran with more than eight million populations suffered from adverse environmental conditions such as pollution and scarcity of natural habitats for recreational activities. Ecological restoration of altered river valleys of Tehran is one of the priorities of Tehran municipality started as a pilot project in Farahzad river. Intensive disturbance, conversion into various urban utilization, illegal building construction, waste water release into the river, garbage accumulation, artificial park constructions and domination of invasive species have largely altered the river. Parts of the river located in Pardisan Nature Park was studied before its complete deformation into a modern park. The riparian vegetation consisted of Tamarix ramosissima and Salix acmophylla shrubs with large number of aquatic and palustric plants. The norther parts of the river still contain semi-natural vegetation which change into patchy and intensive degraded habitats towards its southern parts. In northern parts of valley there are old gardens of Morus alba and Juglans regia, and planted trees such as Plataneus oreientalis and Acer negundo. Salix acmophylla, Fraxinus excelsior and Celtis caucasica are native species growing on river margin or surrounding steep slopes. The rare local endemic Convolvulus gracillimus still occurs in surrounding dry slopes. Ailanthus altissima is an invasive introduced tree largely occupied disturbed habitats and slopes of the valley associated with large number of ruderals belonging to genera Amaranthus, Bassia, Chenopodium, Echinochloa, Heliotropium, Tribulus etc. Restoration plan include 1. Study of past biological and geomorphological conditions of the area based on remnants of vegetation and aerial and satellite imaginary data 2. Survey of present environmental conditions of the area including identification native and introduced plants and animals, assessing the degree of originality of existing vegetation and cultural landscapes and abiotic factors. 3. Soil reclamation and topography improvements towards cultivation and/or formation of natural vegetation.