Plant diversity of Tucson's historical riparian landscape

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Summary:

Until the late nineteenth century, perennial channels and marshes occupied the Santa Cruz and Rillito valleys near Tucson. A combination of historical narratives and biological collections document diverse and dynamic riparian communities associated with these features and the basin's high water table. In the 1890s, a combination of anthropogenic land-use changes and unusual climatic events initiated a cycle of erosion that physically impacted the channels and floodplains, irreversibly altering the hydrology of the basin. Ongoing groundwater withdrawal related to agricultural and municipal development further deprived the vegetation of a perennial source of moisture, and these unique ecosystems effectively disappeared within a few decades.

Important concepts:

Historical ecology

Plant collection and curation

Indicator species (wetland indicators)

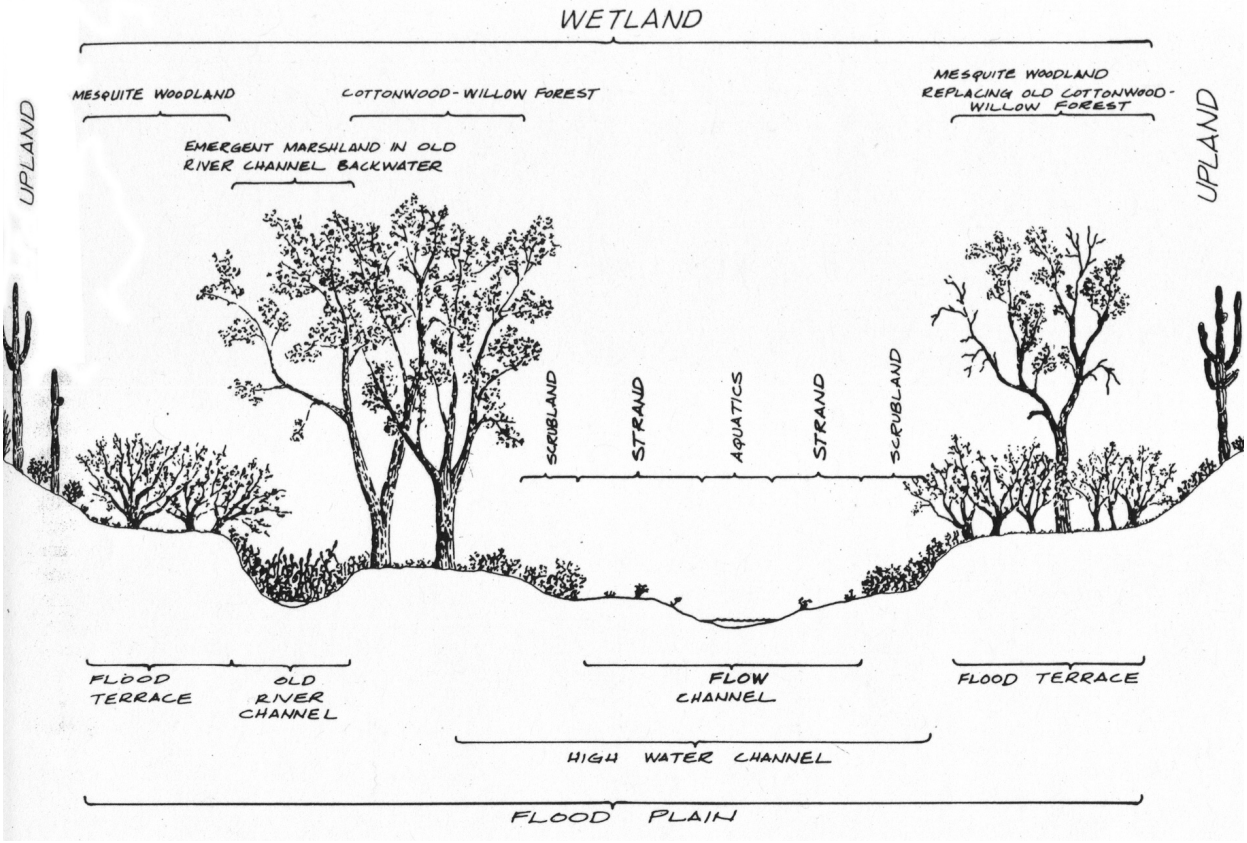
Useful references:

Correll, D. S. and H. B. Correll. 1972. Aquatic and wetland plants of southwestern United States. Environmental Protection Agency Water Pollution Control Research Series, Government Printing Office, Washington, DC. [keys and plant species descriptions, including biogeography and ecology]

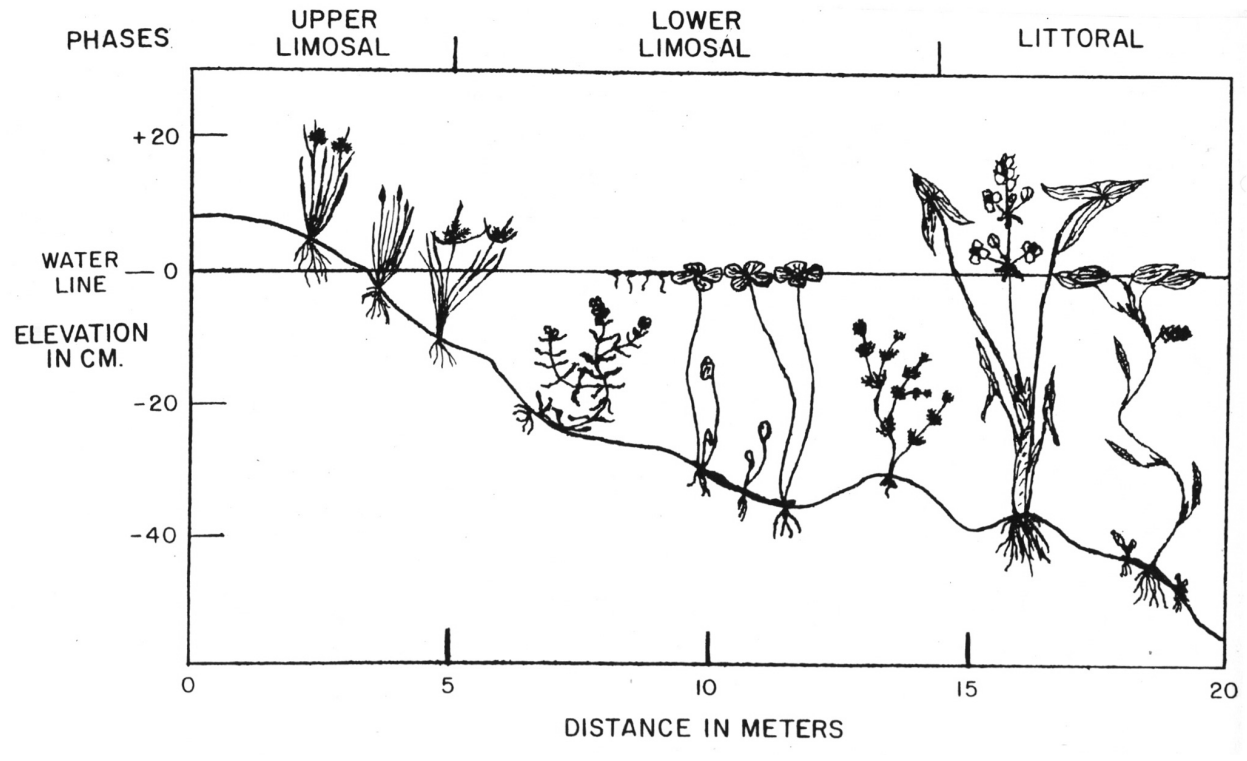
Minckley, W. L. and D. E. Brown. 1994. Wetlands, pp.223-287. *In*: D. E. Brown, ed., Biotic communities – southwestern United States and northwestern Mexico. University of Utah Press, Salt Lake City, UT. [source of Fig. 163, in handout]

Naiman, R. J., H. Decamps, and M. Pollock. 1993. The role of riparian corridors in maintaining regional biodiversity. Ecol. Applic. 3: 209-212. [article in handout]

Yatskievych, G. and C. E. Jenkins. 1981. Fall vegetation and zonation of Hooker Cienega, Graham County, Arizona. J. Arizona-Nevada Acad. Sci. 16: 7-11. [source of Fig. 3, in handout]



Riparian plant communities in warm-temperate and subtropical habitats in the American southwest.
(Minckley & Brown 1994: Fig. 163)



Plant zonation at Hooker Cienega in December 1979
(Yatskievych & Jenkins 1981: Fig. 3)