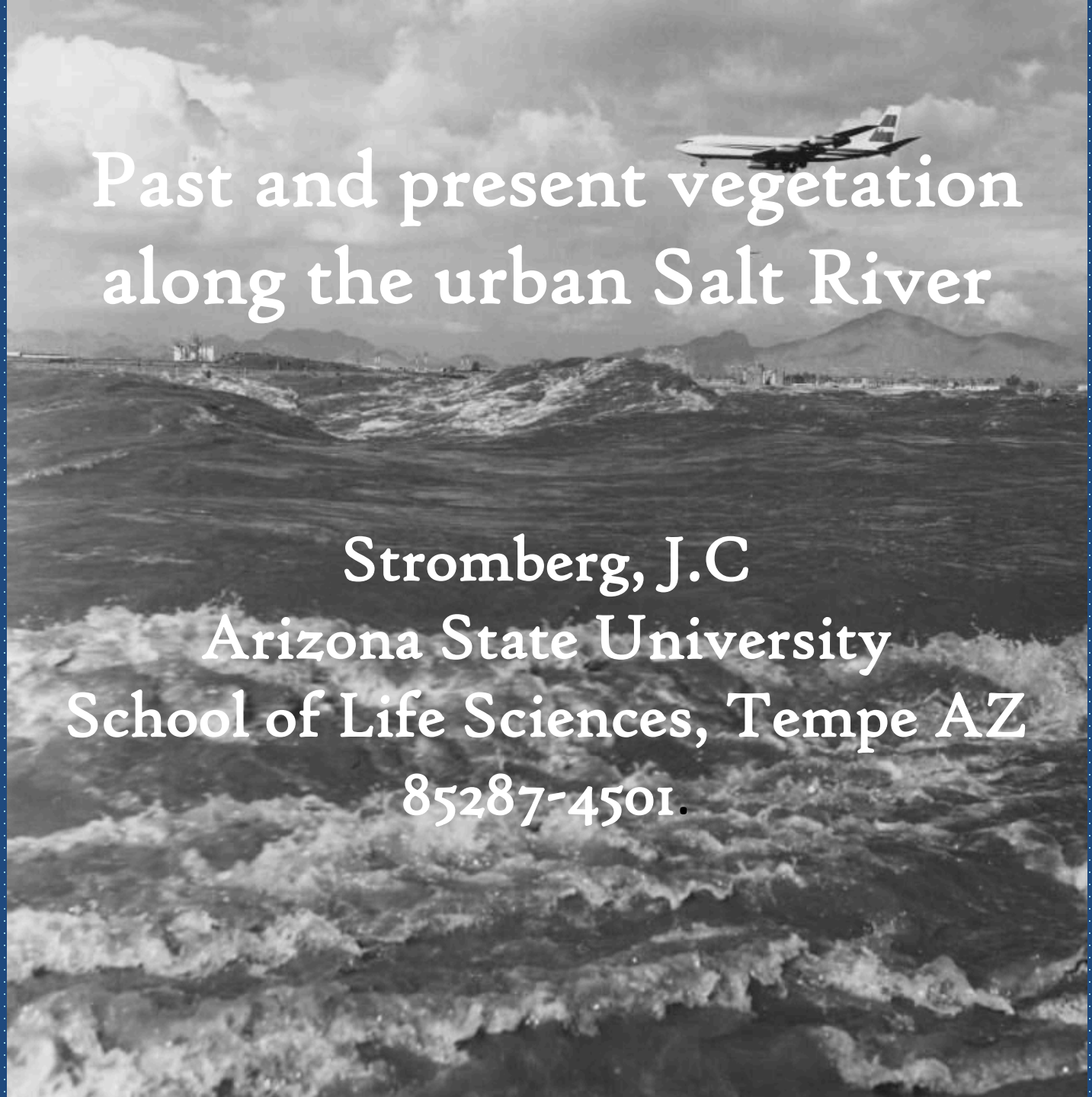


Past and present vegetation along the urban Salt River

Stromberg, J.C
Arizona State University
School of Life Sciences, Tempe AZ
85287-4501.

1930

2011

SALT RIVER

This comparison of the lower Salt River is in the vicinity of Tempe's Town Lake from eight decades ago to today. The Salt River at one time was a much more freely-flowing river than most today realize. Since the Roosevelt Dam upstream of this location was built in 1911, the regular flows on the Salt slowed, but the scale of the river is still very evident in these old aerial photographs.

Aerial photographs courtesy of the Flood Control District of Maricopa County—www.fcd.maricopa.gov

NORTH
MAPS NOT TO SCALE

Vegetation Map of Phoenix, 1867 - 1868

(Based on Public Lands Survey logs)

Rio Salado
Central Ave.

Labels for the Vegetation Series
(Brown, Lowe, and Pase 1979; Turner and Brown 1994)

C	Cotton - Willow series (224.53)
M	Mesquite series (224.52)
Sb	Desert Saltbush series (154.17)
Cr	Creosotebush - Bursage series (154.11)
Cr/Sb	Creosotebush / Saltbush mixed
Pv/S	Paloverde - Mixed Cacti series (154.12)

http://caplter.asu.edu/docs/contributions/Vegetation_of_Phx_color.pdf

Environmental forces structuring the vegetation- WATER TABLES

Table 1. Total area of tamarisk in the channels of the Salt and Gila rivers, Granite Reef Dam to Gillespie Dam.

Year	Area (hectares)
1900	< 202[1]
1929	< 1,215[1]
1937	8,991[2]
1941	12,110[2]
1957	8,660
1961	8,325
1970	6,880
1975	5,138
1979	5,741

[1] Estimates based on incomplete coverage of ground data.
[2] Estimates based on incomplete aerial photographic coverage.

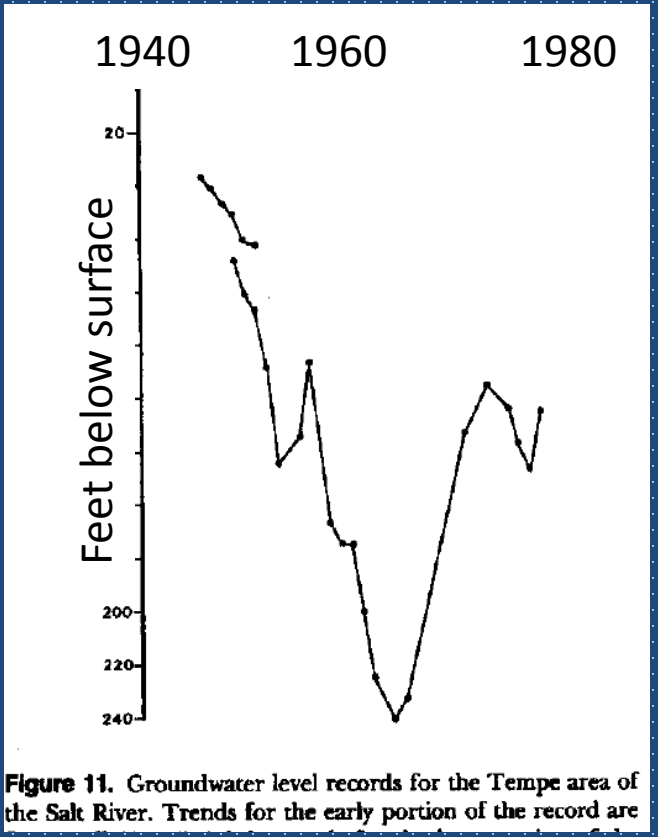
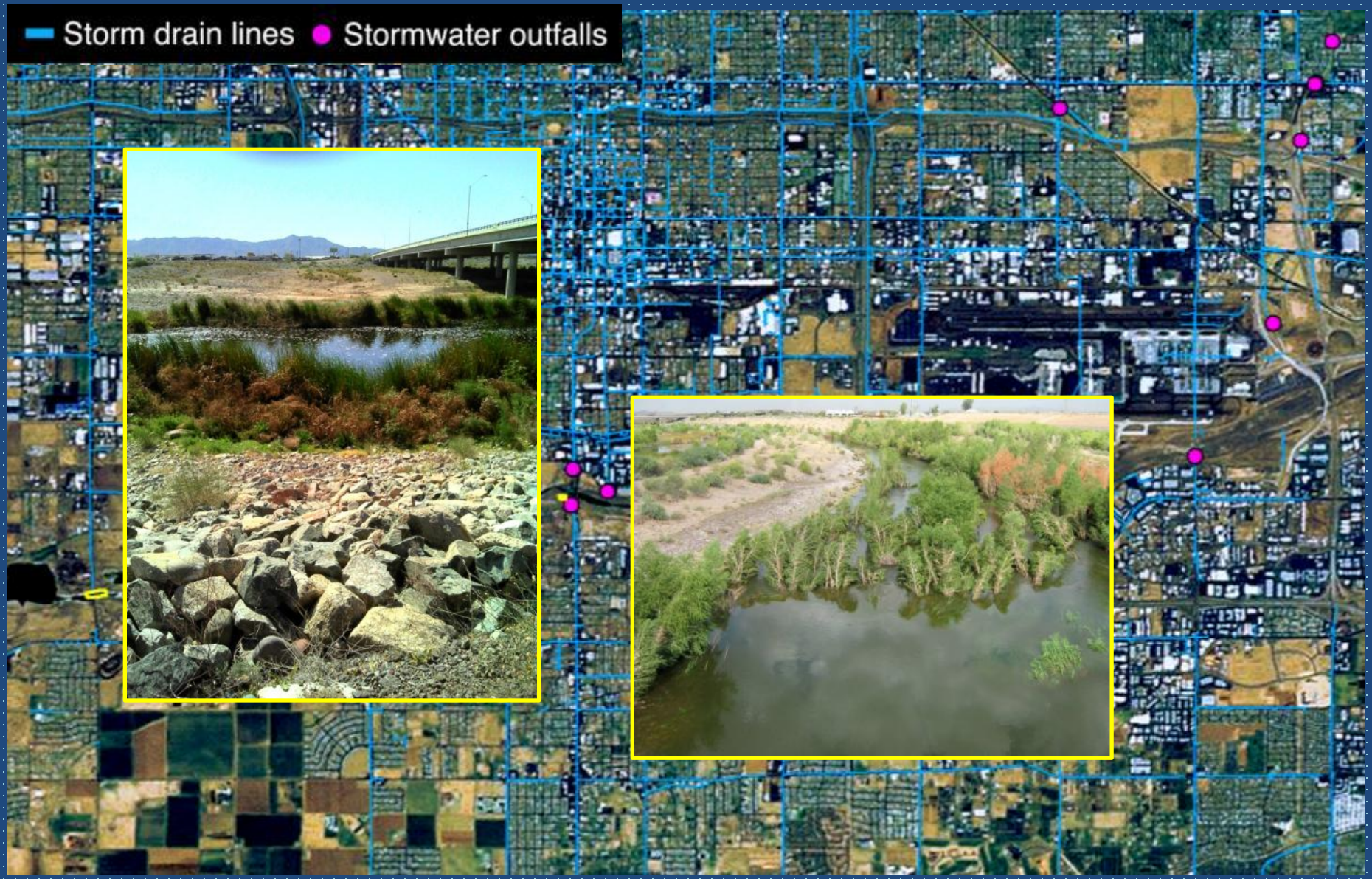


Figure 11. Groundwater level records for the Tempe area of the Salt River. Trends for the early portion of the record are

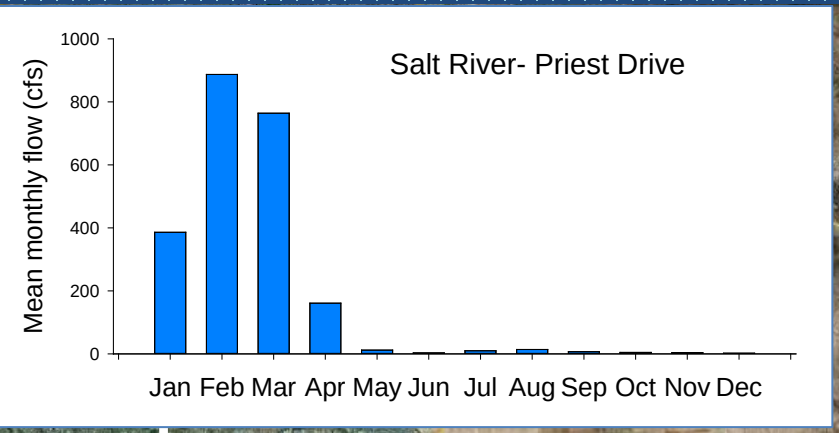
The dense growth of tamarisk in Tempe, Arizona declined in the late 1940s and 1950s, and never recovered,

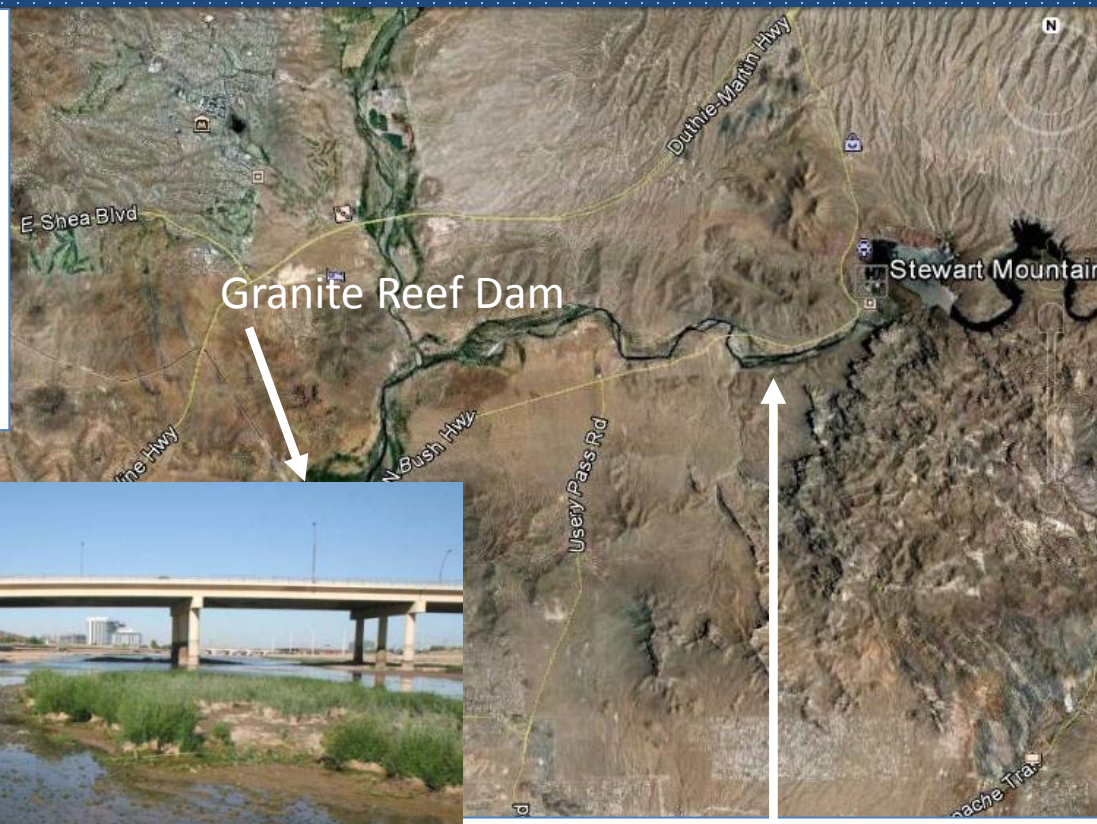
Graf 1967

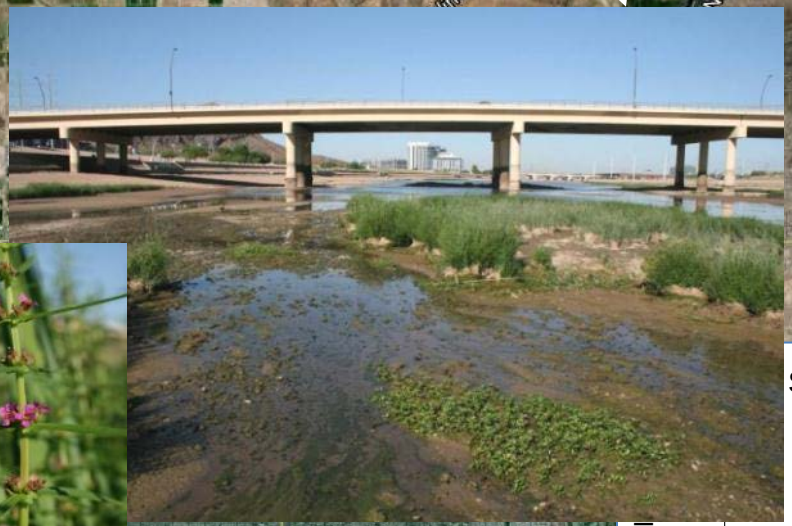
Environmental forces structuring the vegetation- LOW FLOWS

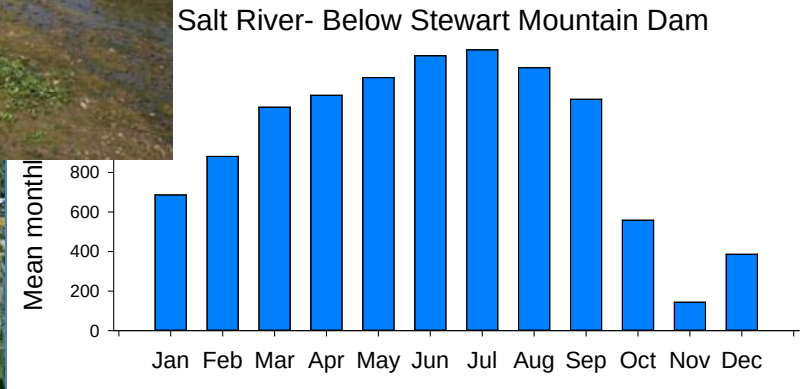


Environmental forces structuring the vegetation: FLOODS

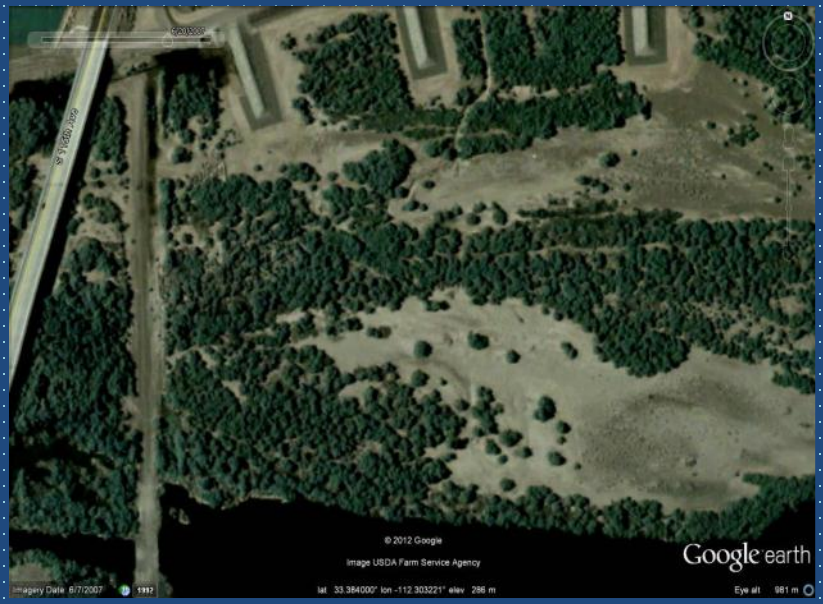


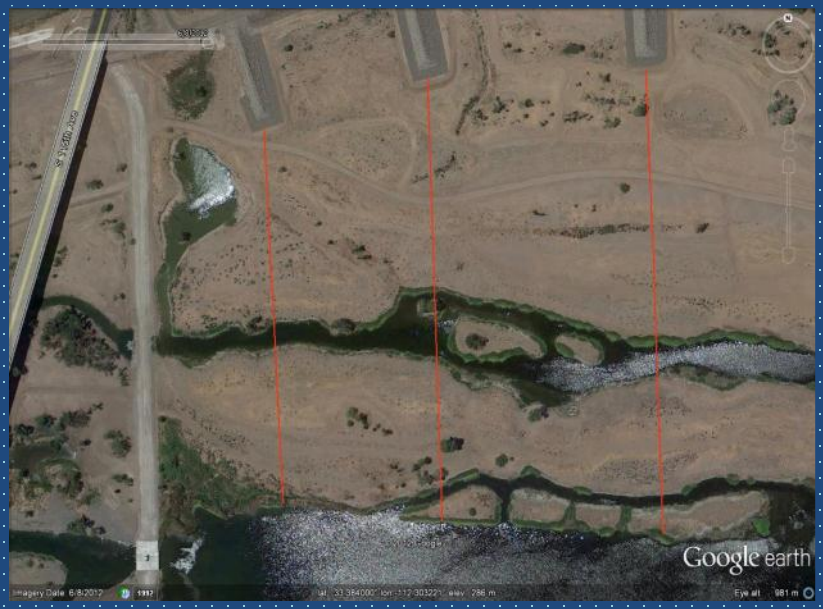


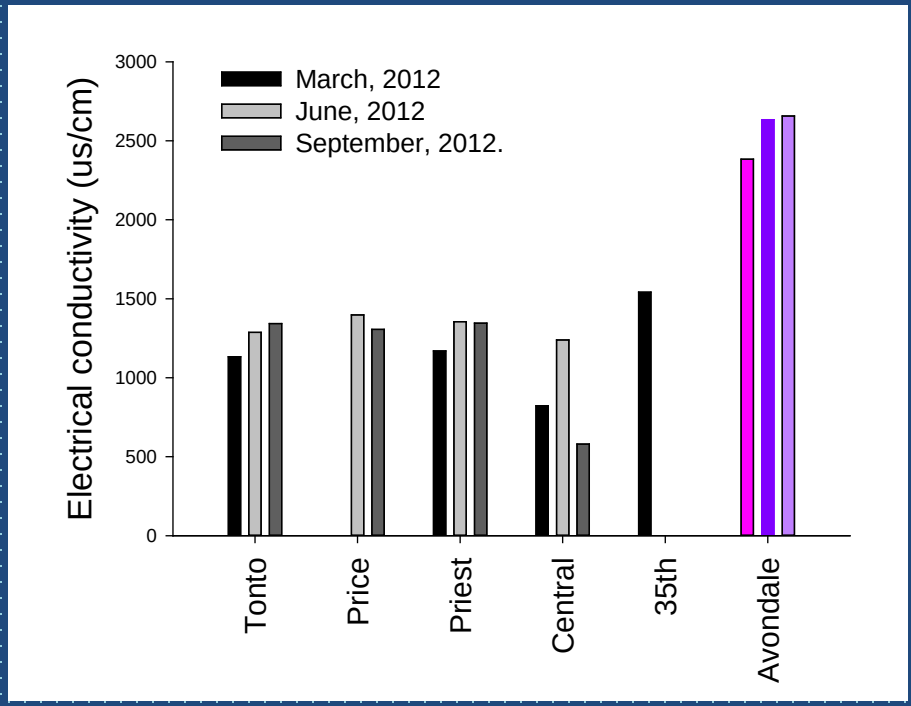




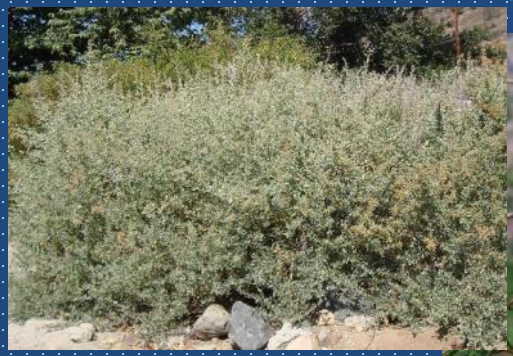
Environmental forces structuring the vegetation:
WATER QUALITY







Halophytes



DISPERSAL: Where are the seeds or plants coming from?

Historic collections




Plantings, birds, water flows







Importance of Monitoring

"How can we be expected to make the best decisions for species conservation and land management if we don't even know where species are present on the landscape?"

Eustoma exaltatum: collected along Salt River in 1891, 1931, 1966, and 2010

!!! 520 plant taxa recorded to date along Urban Salt River!!!

Ongoing research: Urban tree inventory

Disturbance, Floods, and Regeneration: Why is Goodding willow, but not Fremont cottonwood, establishing in abundance?

Community Challenge Grant: CITIZEN SCIENCE OPPORTUNITY