Floods, Tamarisk and Drought
Recent and future changes along the Colorado River

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“Change is the only constant”

“You can never step into the same river, for new waters are always flowing on to you”

Heraclitus - 540-480 BC
FLOODS

1917
Historic Colorado River Floods in the Moab Valley

- July 4, 1884 ~ 125,000 cfs
- June 3, 1914 ~ 66,100 cfs
- June 19, 1917 ~ 76,800 cfs
- June 1, 1928 ~ 65,000 cfs
- May 15, 1941 ~ 64,400 cfs
- June 9, 1957 ~ 64,200 cfs
- June 27, 1983 ~ 61,900 cfs
- May 27, 1984 ~ 70,300 cfs

cfs - cubic feet per second
The 1984 Flood

• Second largest flood of record
• Peak flow - 70,300 cfs
  (at Dewey Bridge on 27 May 1984)
A 60 second history of the tamarisk invasion in North America

Imported from central Asia in the early 1800’s (for use as an ornamental shrub and windbreak species)

New York - 1823, California -1856, Utah - late 1800’s

Grown and distributed by the USDA starting in 1870

Distributed throughout the Southwest by wind and floods (about 10,000 acres in 1920 - over 1.2 million acres in 1960)

Invasion along the Colorado River aided and abetted by the 1983 and 1984 floods

Tamarisk produces seeds throughout the growing season and larger plants produce many millions of seeds each year
Ideal conditions for tamarisk
(and other invasive species)

Water
areas adjacent to perennial streams

Fine grained soils
soils containing significant silt and clay

Surface disturbance
flood, fire, farming, grazing, orv’s etc
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The 1984 flood and the Tamarisk invasion
The ‘bug’ (Diorhabda elongata) and Tamarisk defoliation
Channel changes related to Tamarisk invasion
DROUGHT
The decline of Lake Powell and erosion of the Colorado River Delta at Hite
Now you see it
Now you don’t!
So what about the future?

Chances are it’s going to be dry
  Extended drought is predicted for most of the 21st century
  Less water in Lake Powell
  More river with more bluffs, slumps & rapids along the way
  Less high water in springtime

Tamarisk will be brown - but still around
  Hopefully, Tamarisk populations will be reduced to < 30% of present levels

The river will still flood
  but floods will likely be fewer and less predictable