

Reservoir Sediment Management in the Kansas River Basin

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May 2014

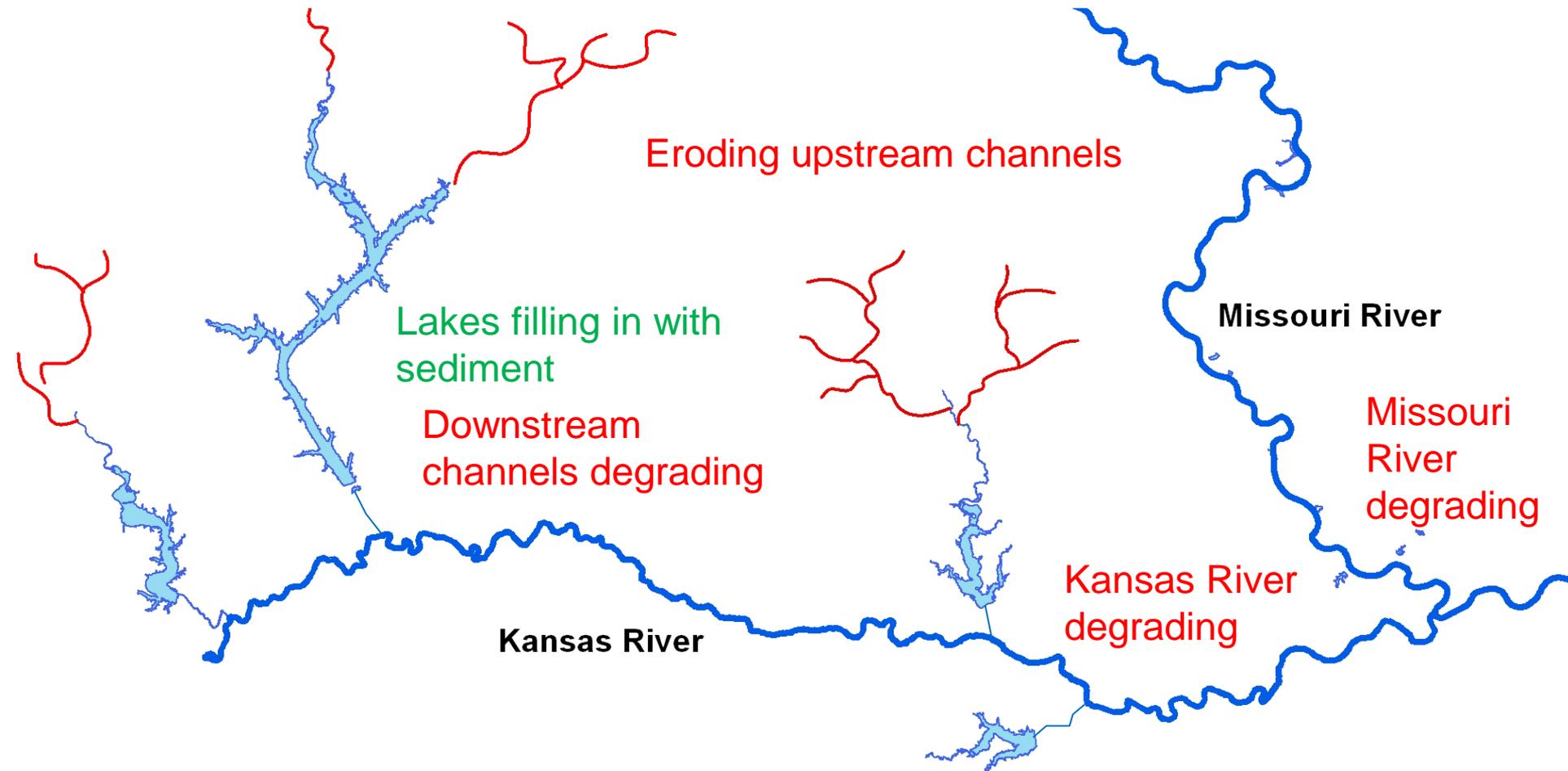


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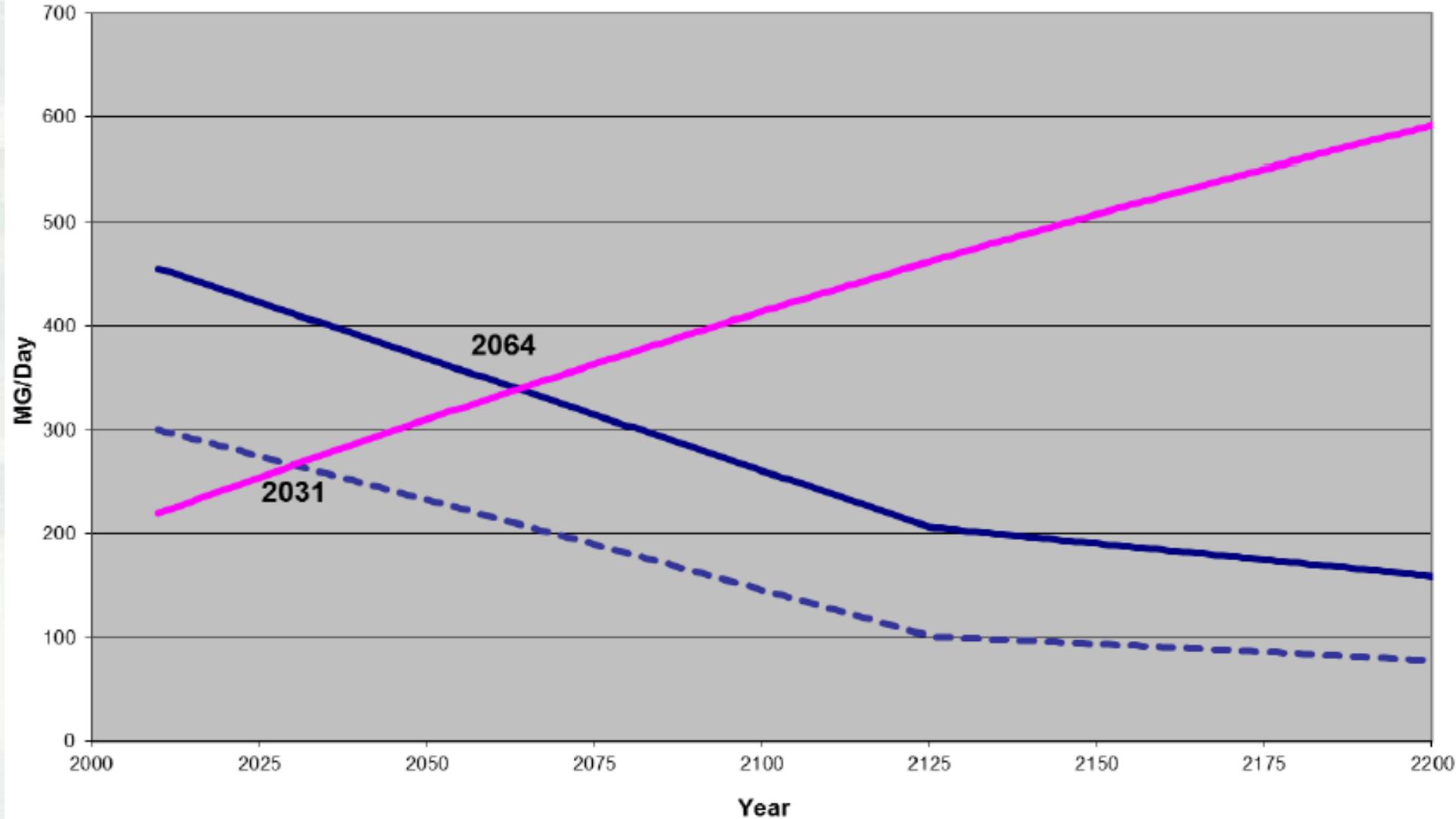
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Sediment Imbalances



Kansas Basin Projected Water Supply Storage and Demand

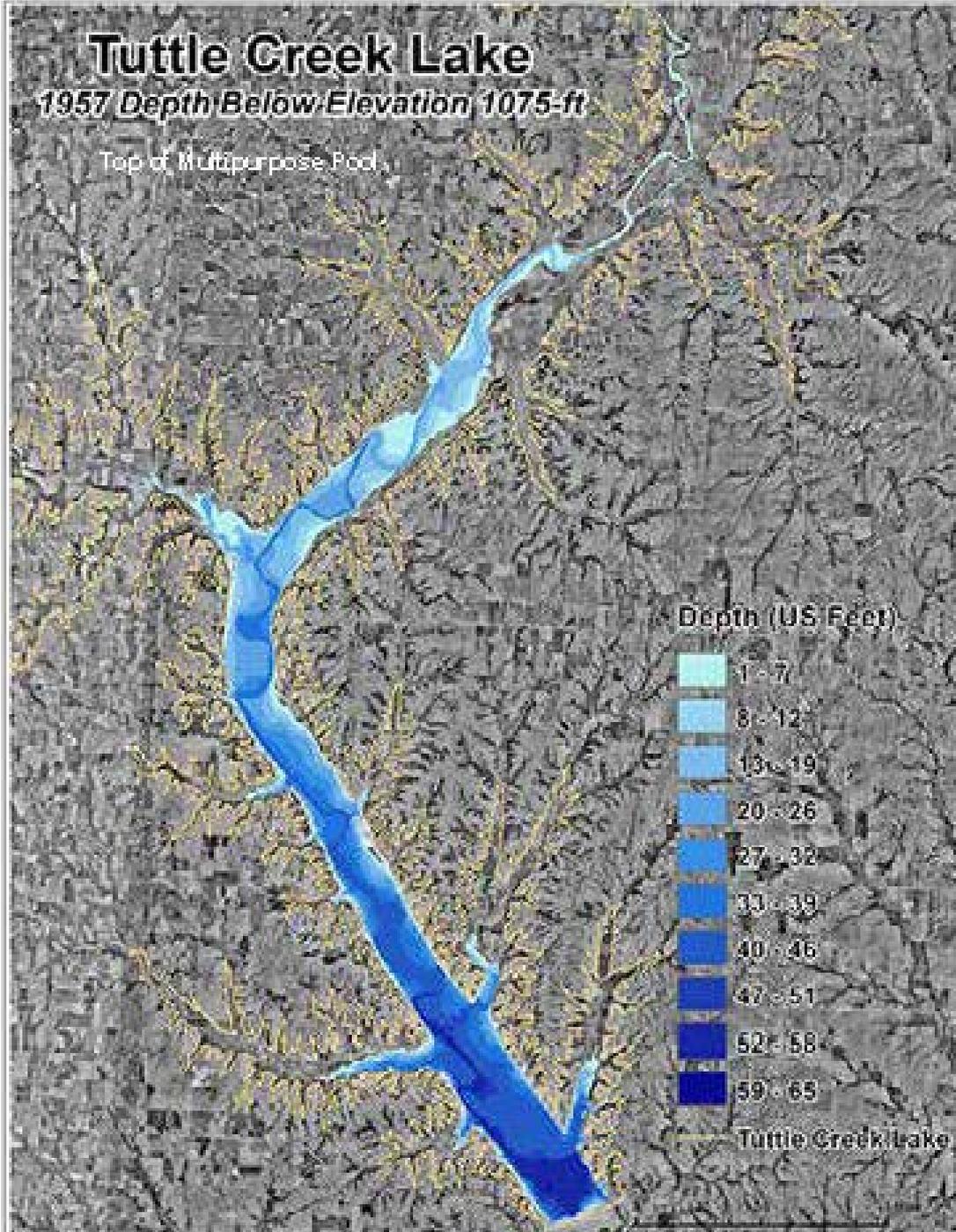
— Supply (Available - MGD) - - - Supply (State-Owned - MGD) — Demand (MGD)



Tuttle Creek Lake

1957 Depth Below Elevation 1075-ft

Top of Multipurpose Pool



COE/HNTB

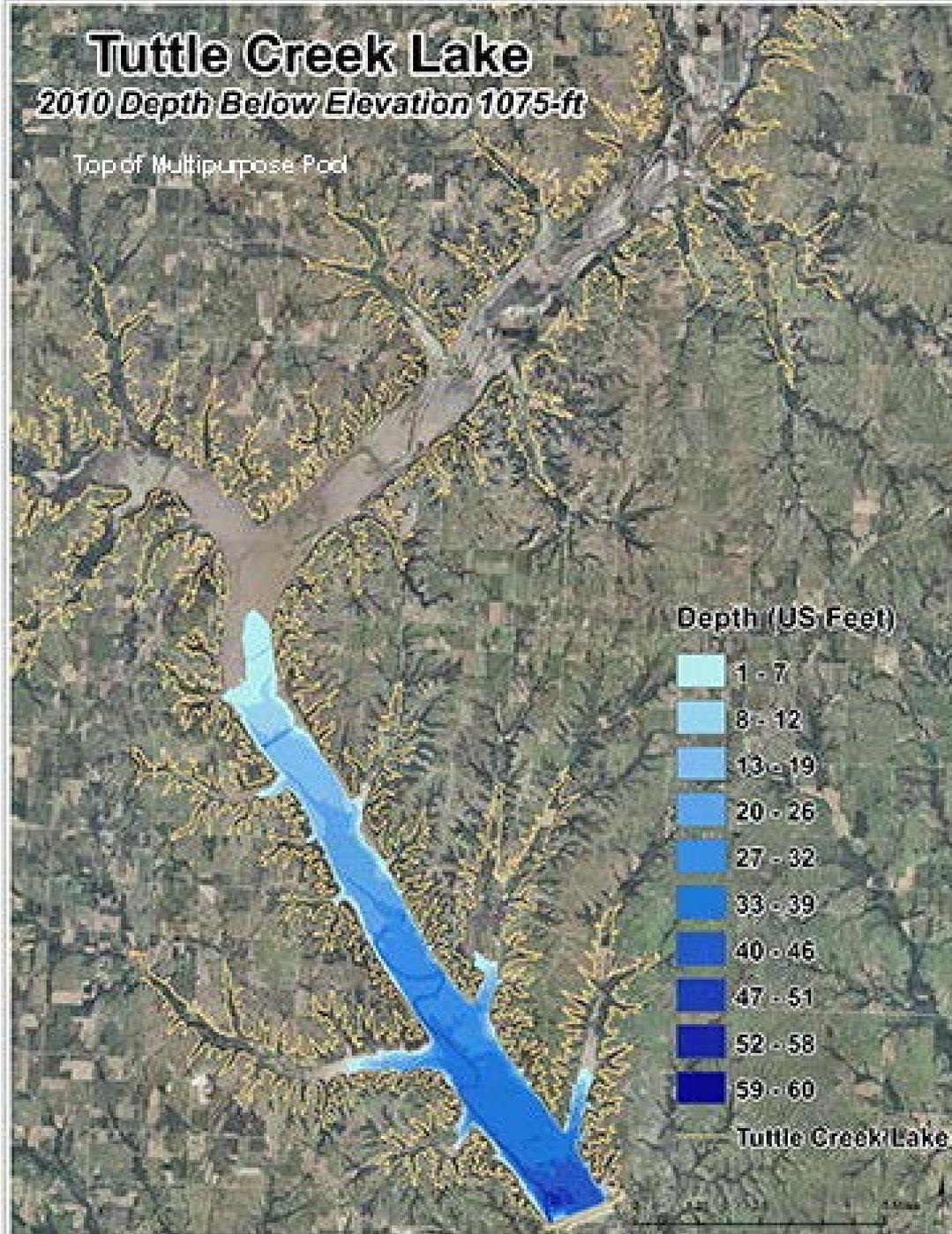


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Tuttle Creek Lake

2010 Depth Below Elevation 1075-ft

Top of Multipurpose Pool



COE/HNTB



BUILDING STRONG®

Tuttle Creek Lake

2010 Depth Below Elevation 1075-ft

Top of Multipurpose Pool

Surface area at normal pool:
Drop from 15,800 acres to 10,900
acres.

Depth (US Feet)



Tuttle Creek Lake

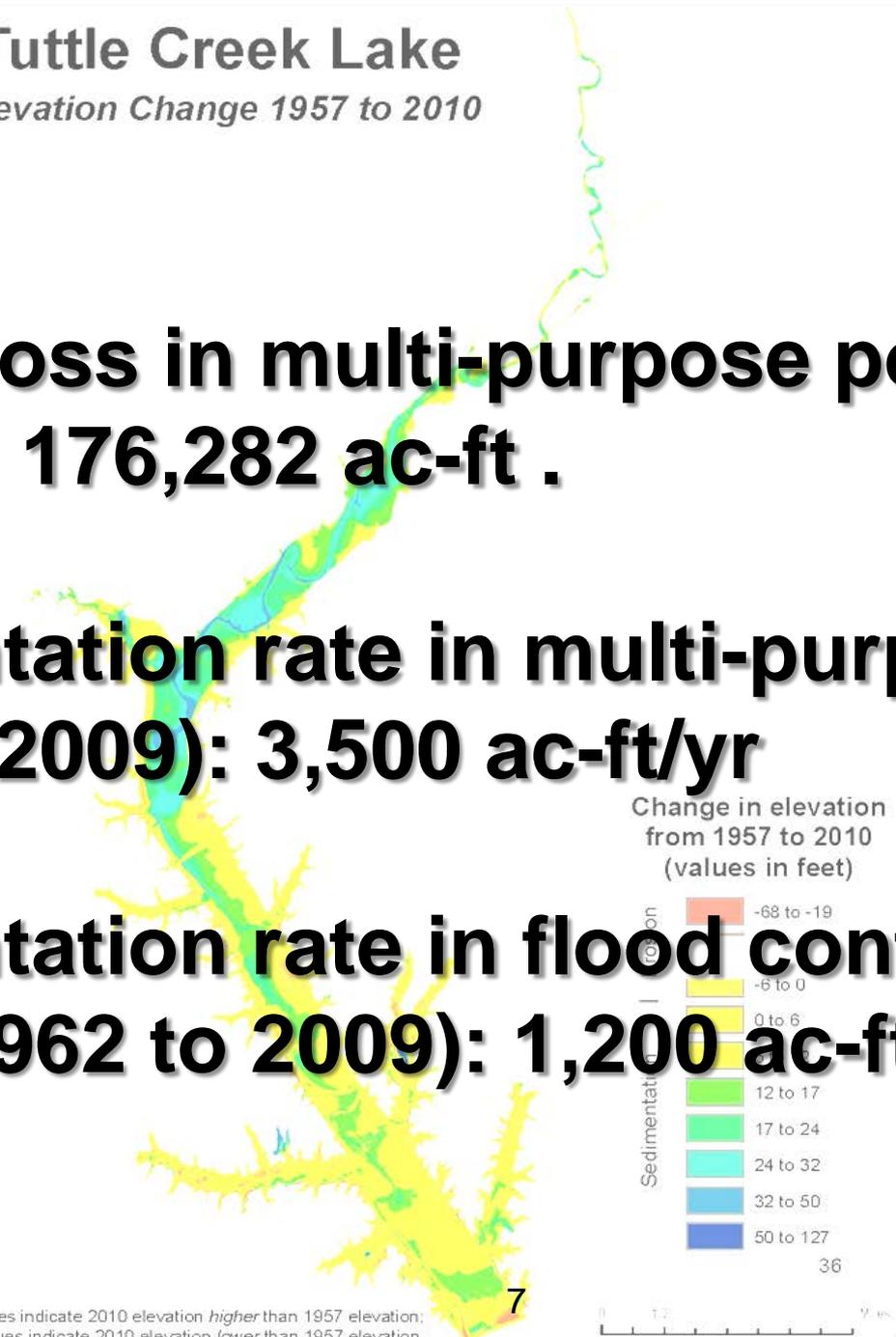
Tuttle Creek Lake

Elevation Change 1957 to 2010

Volume loss in multi-purpose pool (1957 to 2010): 176,282 ac-ft .

Sedimentation rate in multi-purpose pool (1962 to 2009): 3,500 ac-ft/yr

Sedimentation rate in flood control space (1962 to 2009): 1,200 ac-ft/yr



Decrease in Sediment Load in the Kansas River

“...twelve dams were constructed across the Kansas River basin from 1952 to 1969, with six of the impoundments having water-storage capacities larger than Lewis and Clark Lake behind Gavins Point Dam on the Missouri mainstem (Perry, 1994). Predam discharges of suspended sediment from the Kansas River (based on only a few years of record: 1929-1930, 1949-1950) averaged **30-40 million metric tons per year** (Secretary of War, 1935; USACE, 1957). During the record flood year of 1951, the Kansas River carried 150 million metric tons of sediment into the Missouri River. Following dam construction (data available for 1964-1973), however, annual sediment loads of the Kansas River averaged just **10-12 million metric tons** (USACE, 1970, 1972, 1976).”

National Research Council. Missouri River Planning: Recognizing and Incorporating Sediment Management. Washington, DC: The National Academies Press, 2011. Emphasis added.



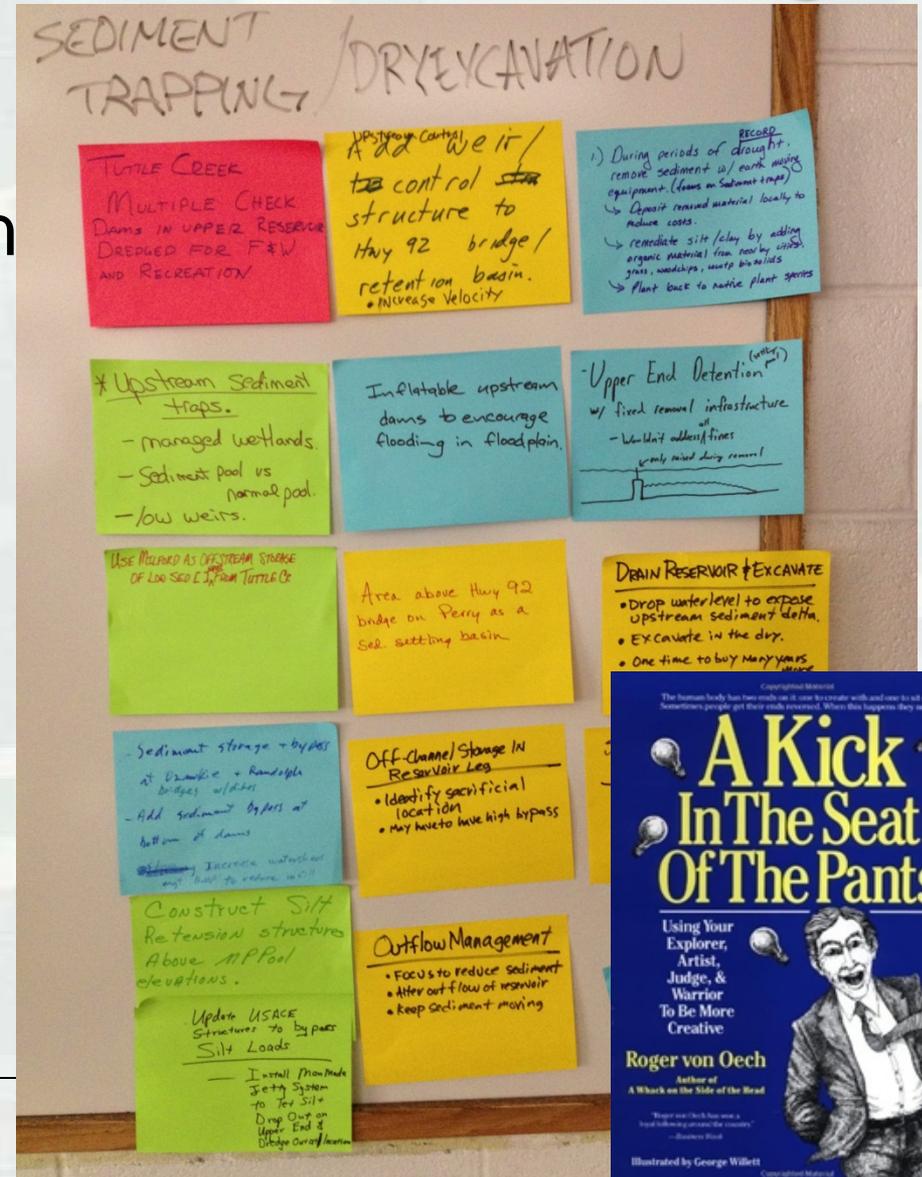
Aug 5 and 6, 2013 Workshop An Exercise Creative Problem Solving

Explorer- Gather information

Artist- Generate ideas

Judge- Evaluate ideas and
select most promising

Warrior- Strategize for
implementation



Questions?

