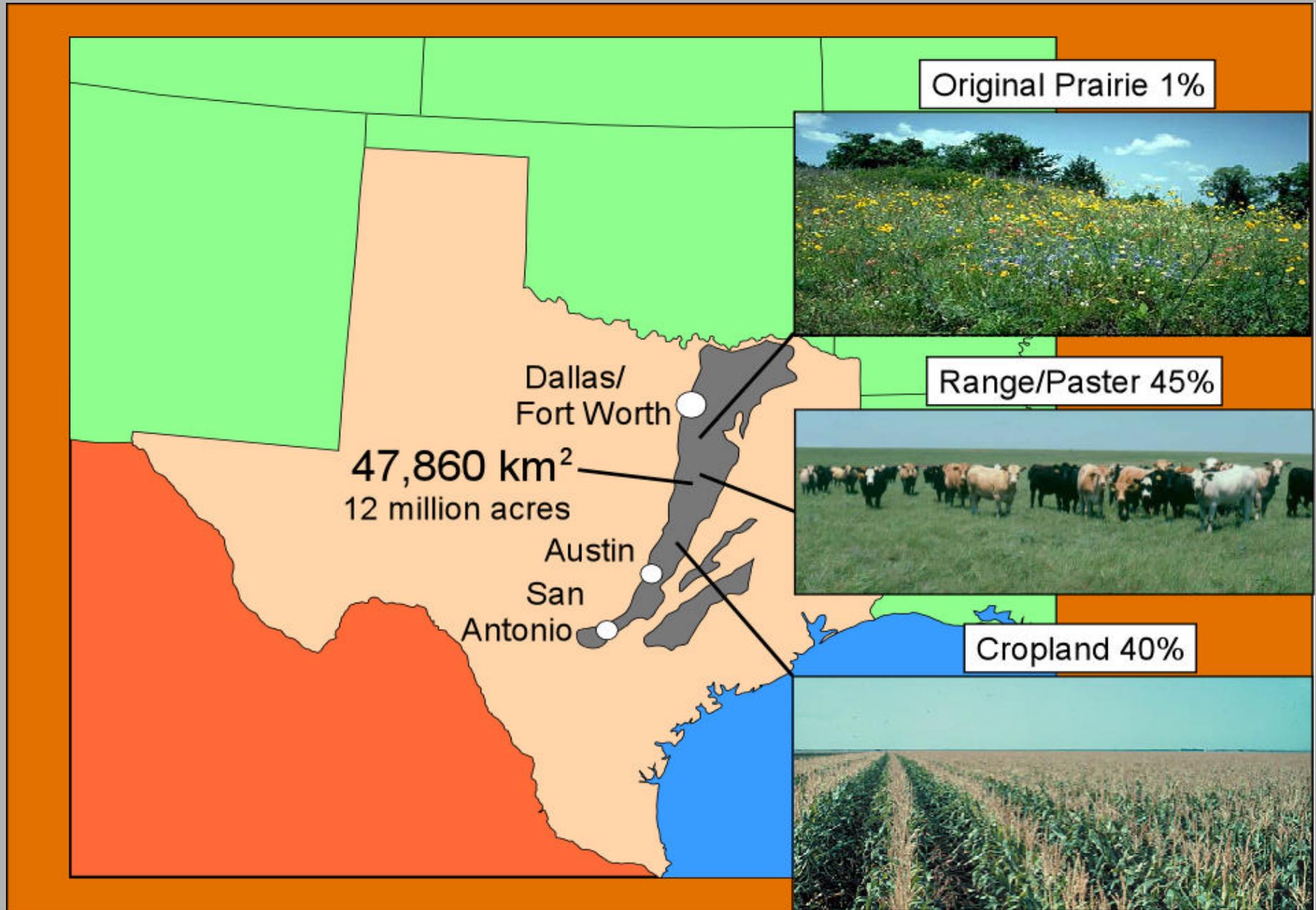




**Long-term Sediment Yield and
the Trap Efficiency of SCS Flood
Control Reservoirs
in the Texas Blackland Prairie**

**John Dunbar and Peter Allen
Baylor University**

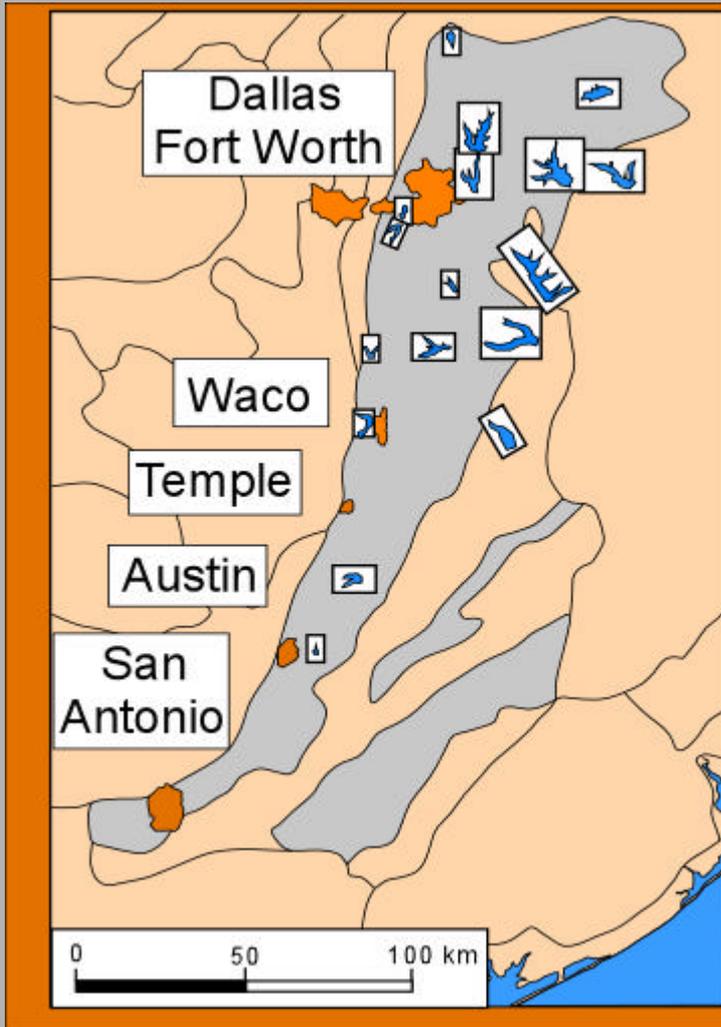
Texas Blackland Prairie



Texas Blackland Prairie



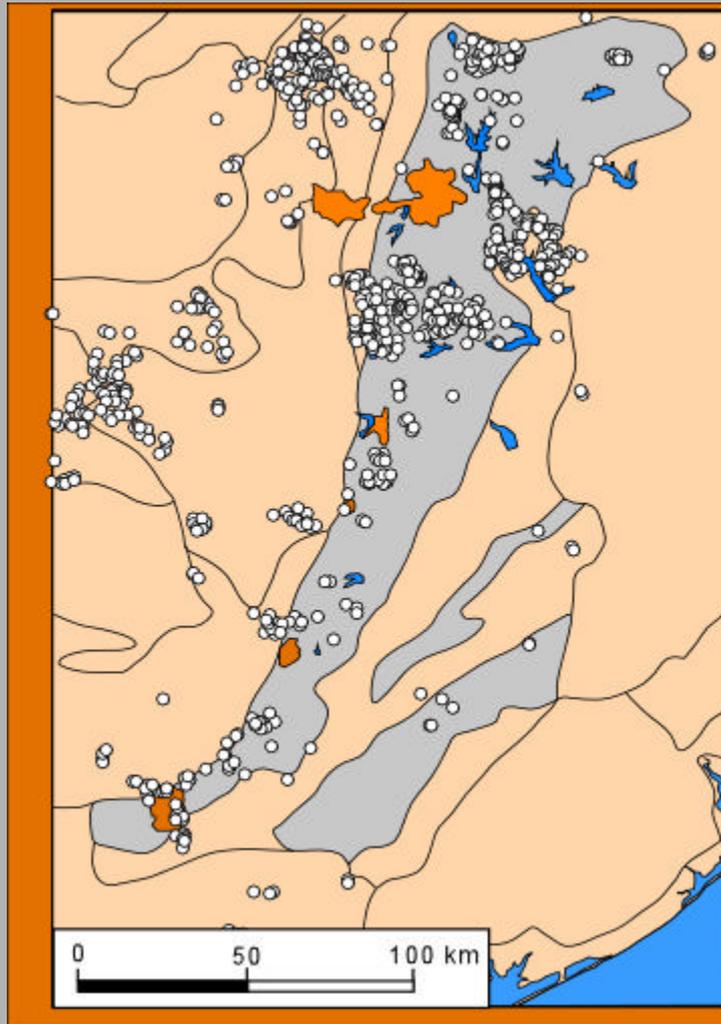
Reservoirs of the Blackland Prairie



Water Supply Reservoir



Reservoirs of the Blackland Prairie



Water Supply Reservoir



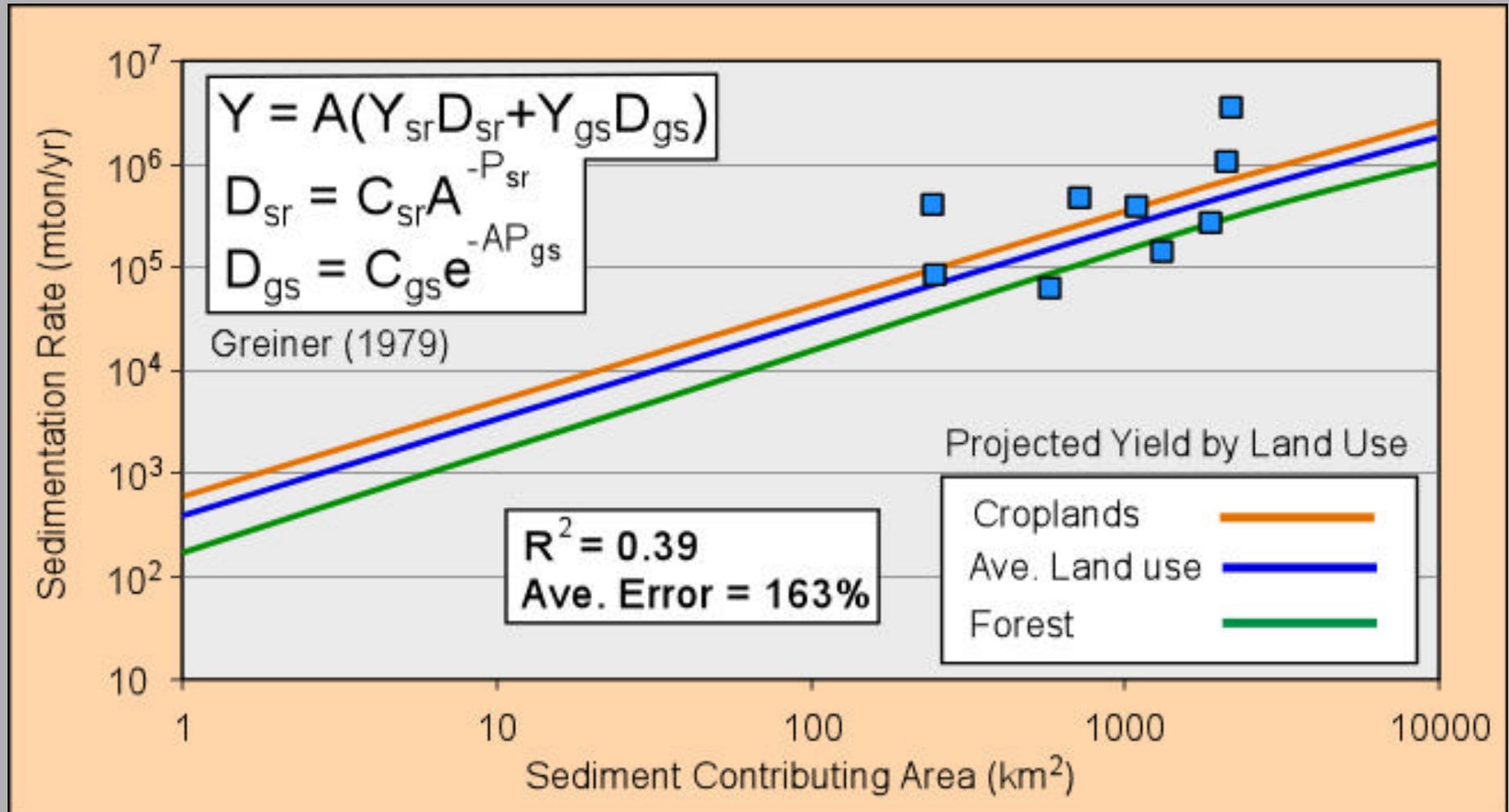
Flood Control Reservoir



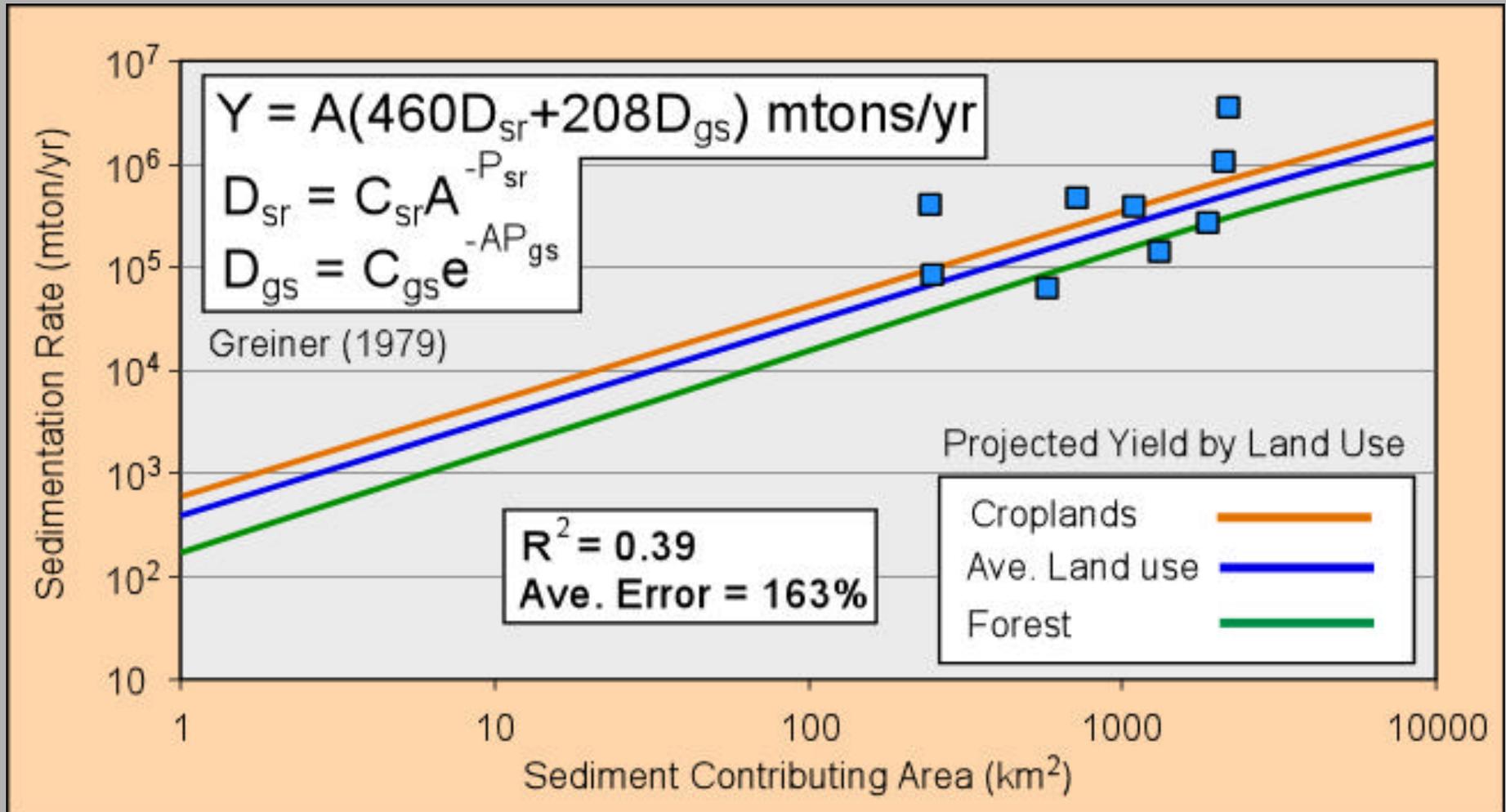
Improved Ag Practices



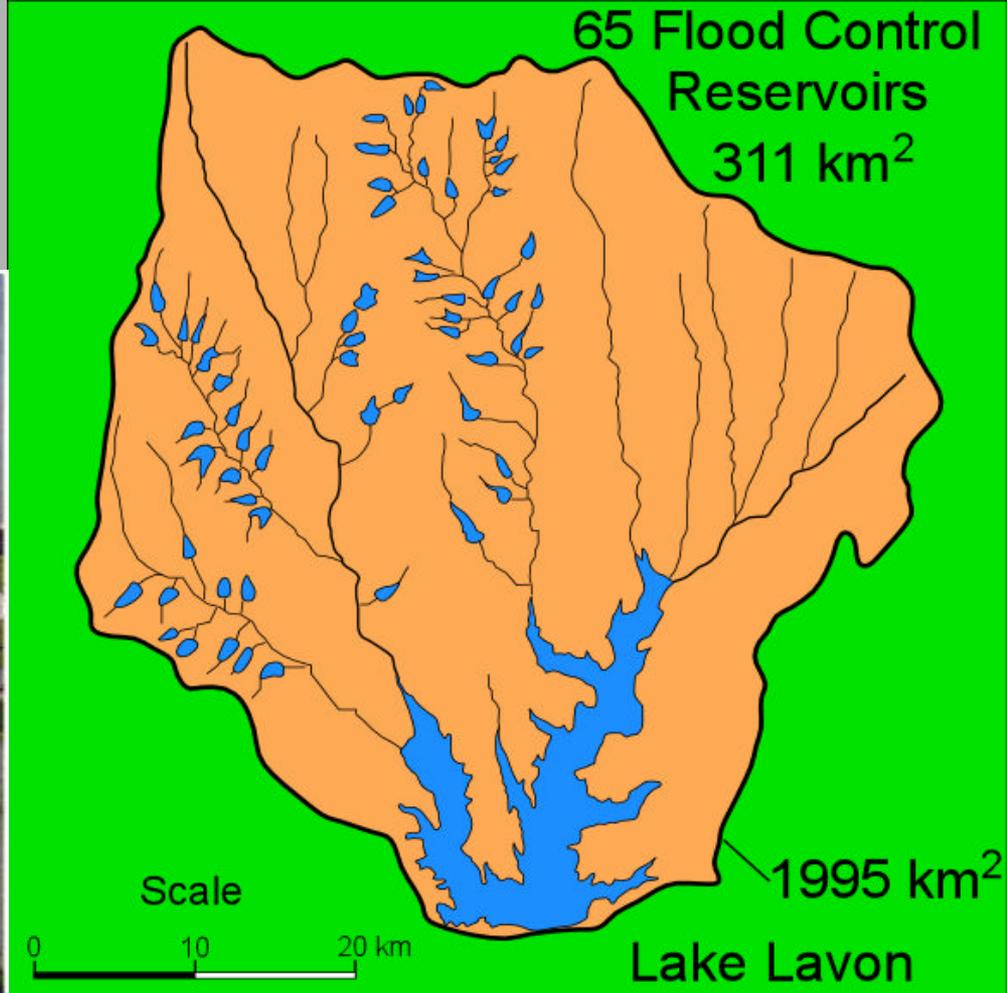
Predicted Vs Observed Sediment Yield for the Texas Blackland Prairie



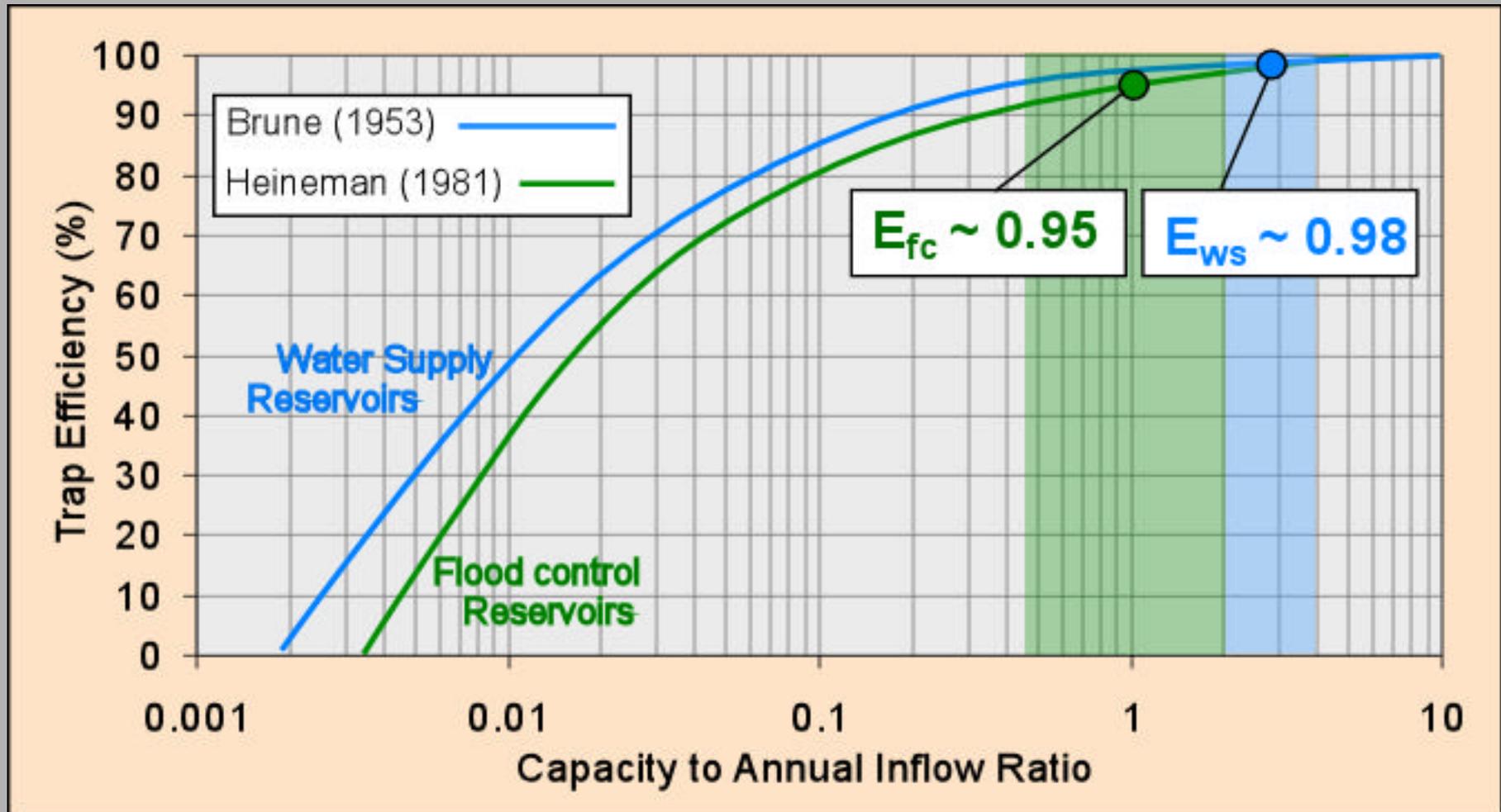
Predicted Vs Observed Sediment Yield for the Texas Blackland Prairie



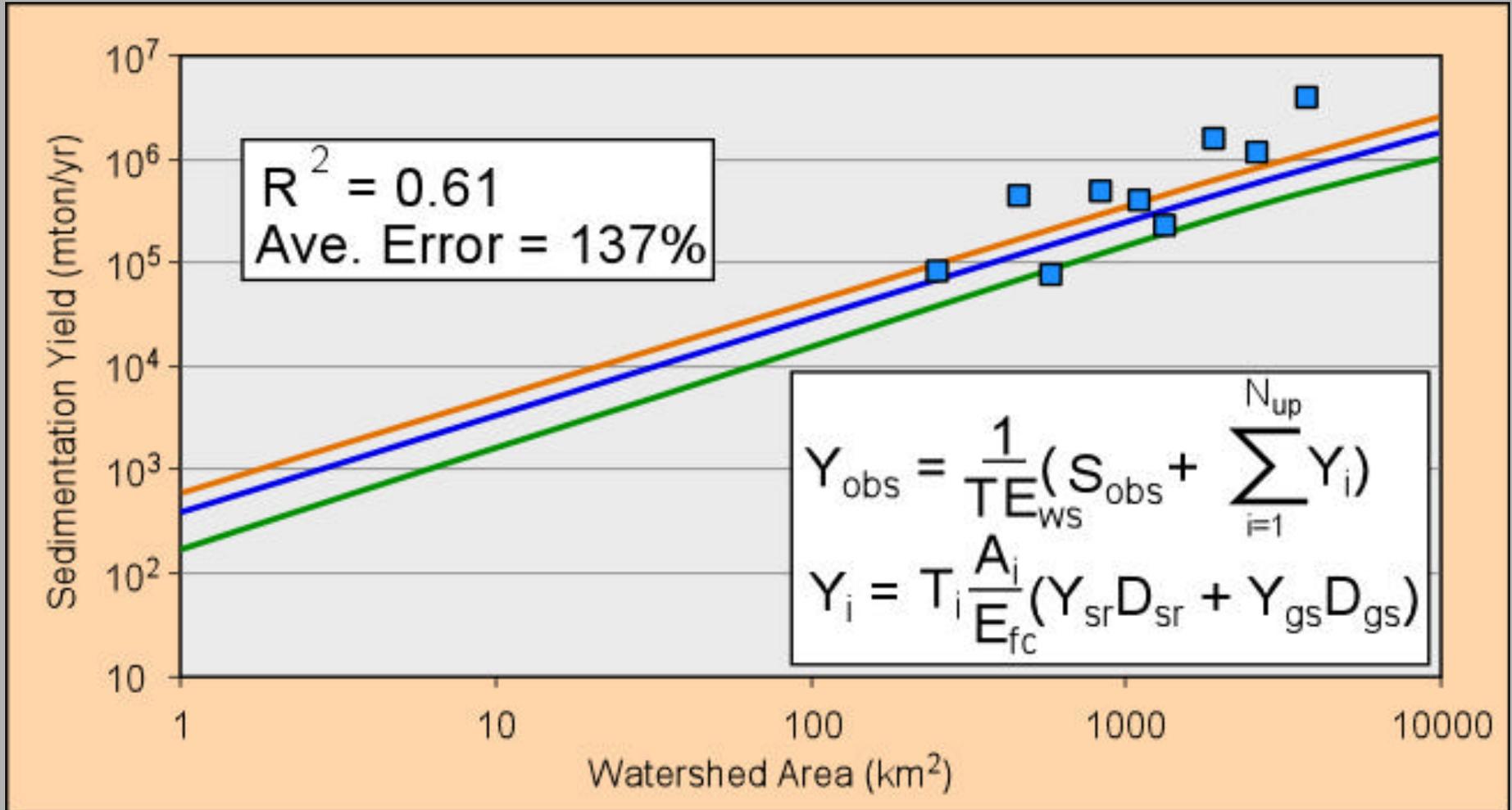
Lavon Watershed



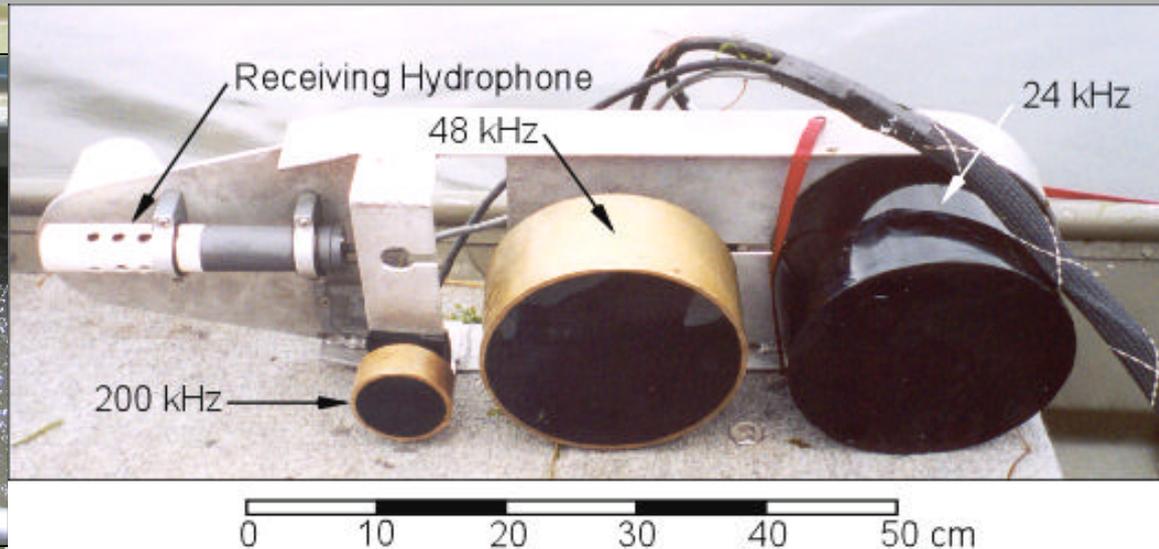
Expected Trap Efficiency



Corrected Sediment Yield using Greiner (1979)



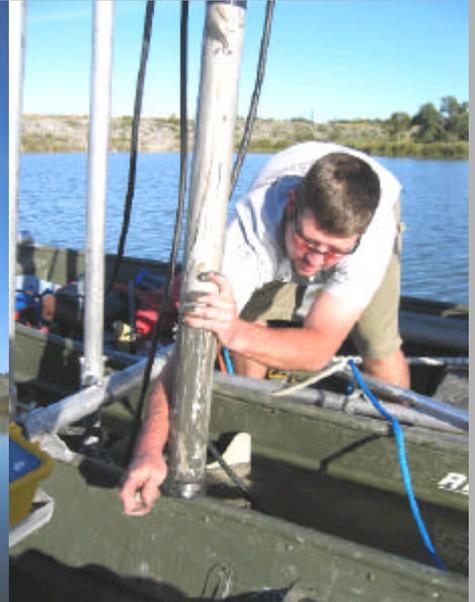
Multi-frequency Acoustic Survey System



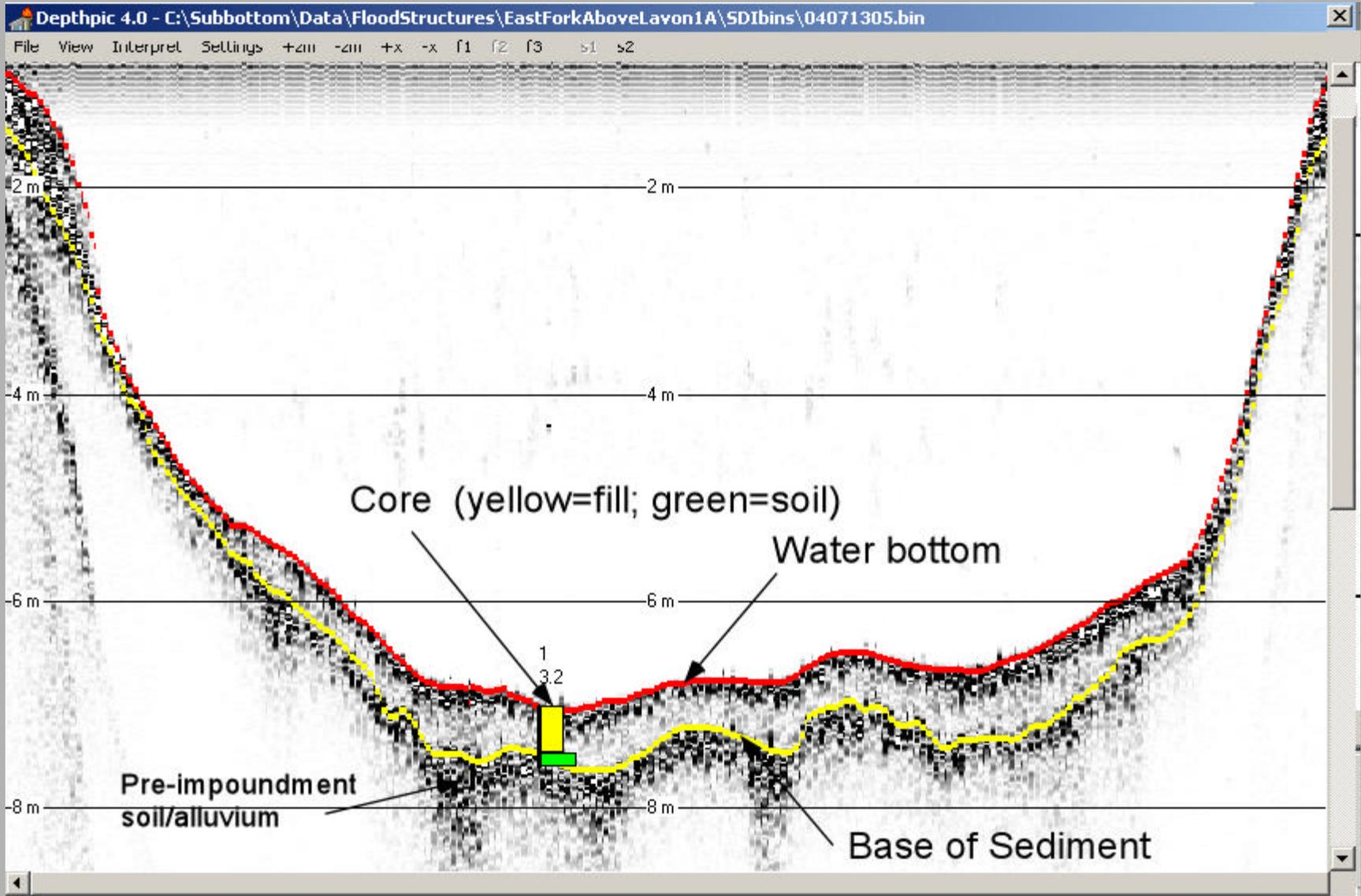
Flood Control Reservoir Survey Vessel



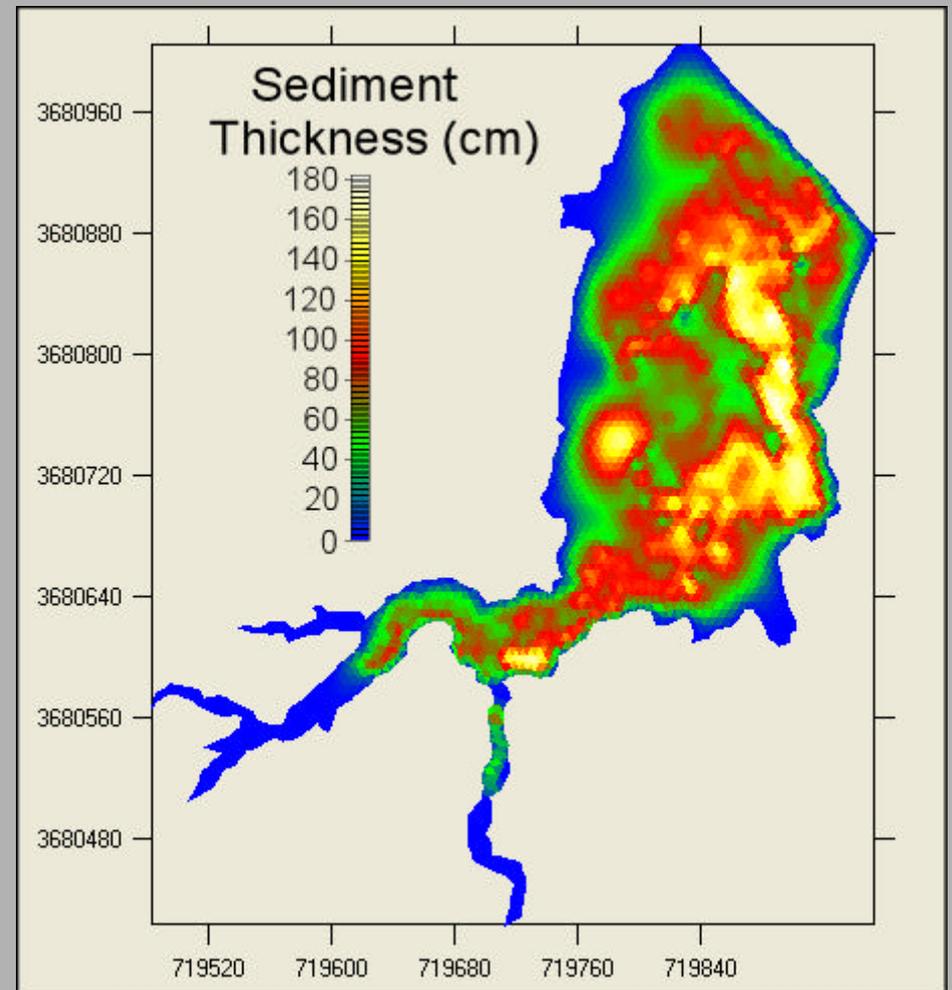
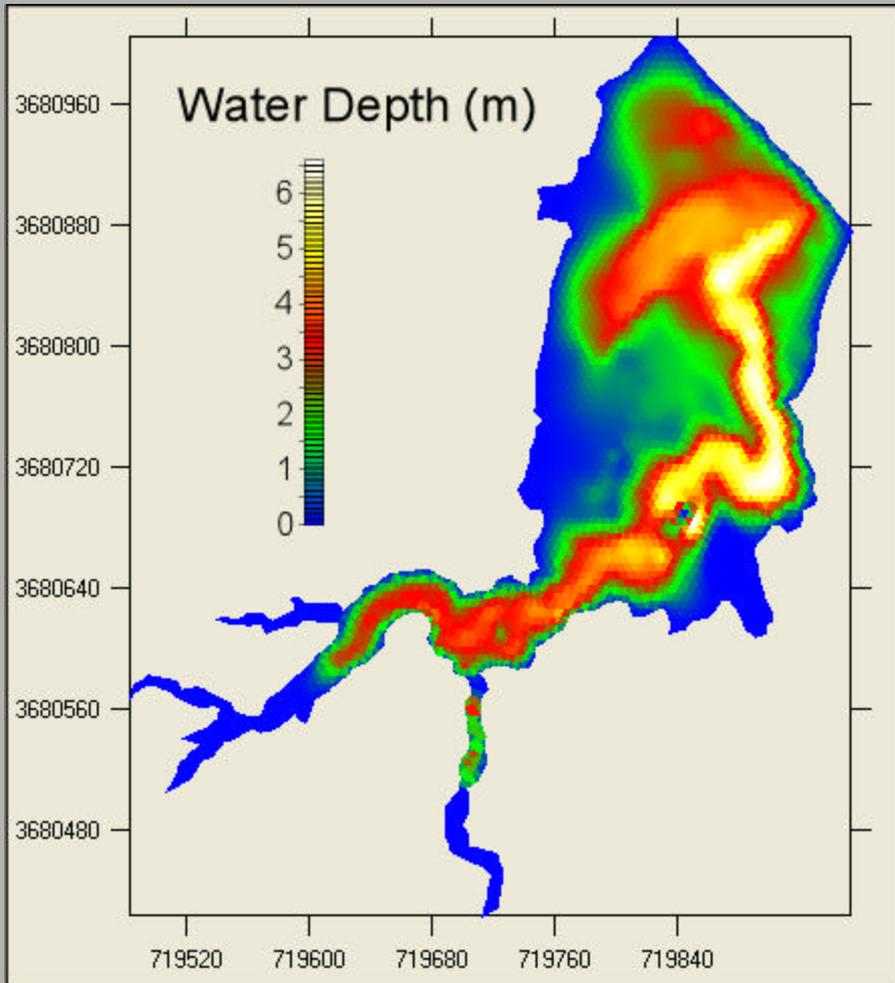
Vibracoring in Flood Control Reservoirs



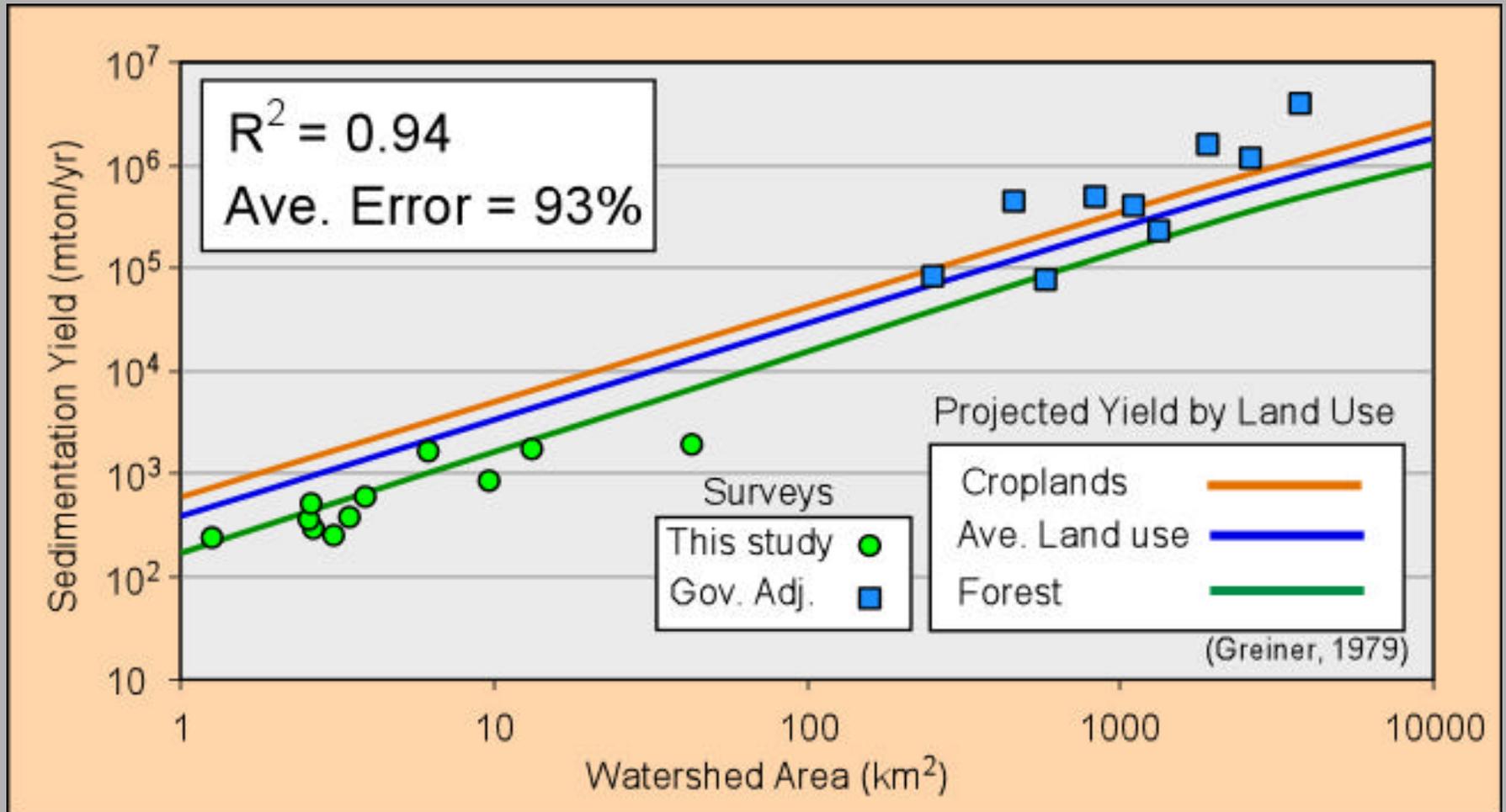
Sub-Bottom Acoustic Profiling



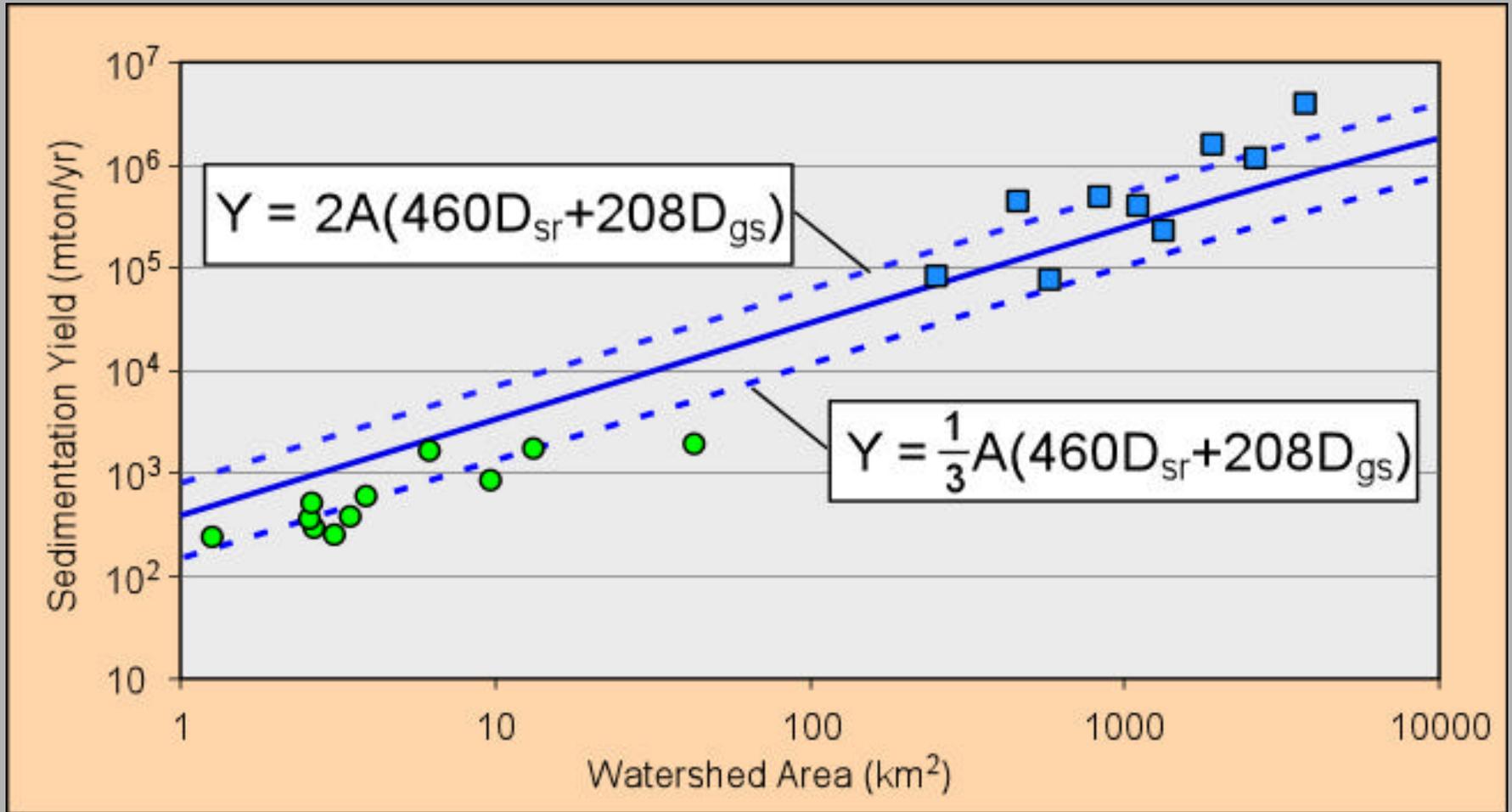
Water Depth and Sediment Thickness in a Flood Control Reservoir



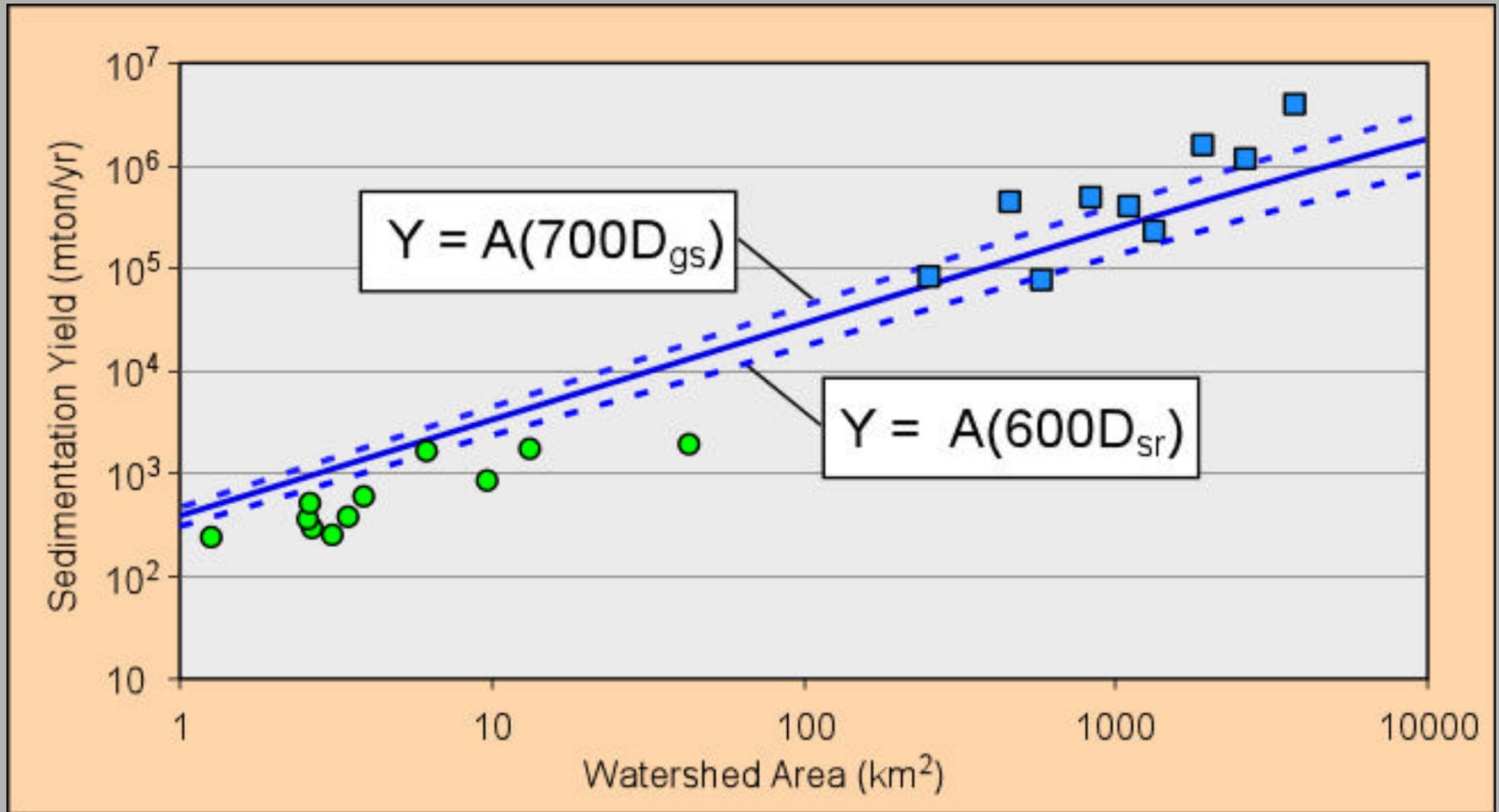
Expected Sediment Yield Vs Greiner



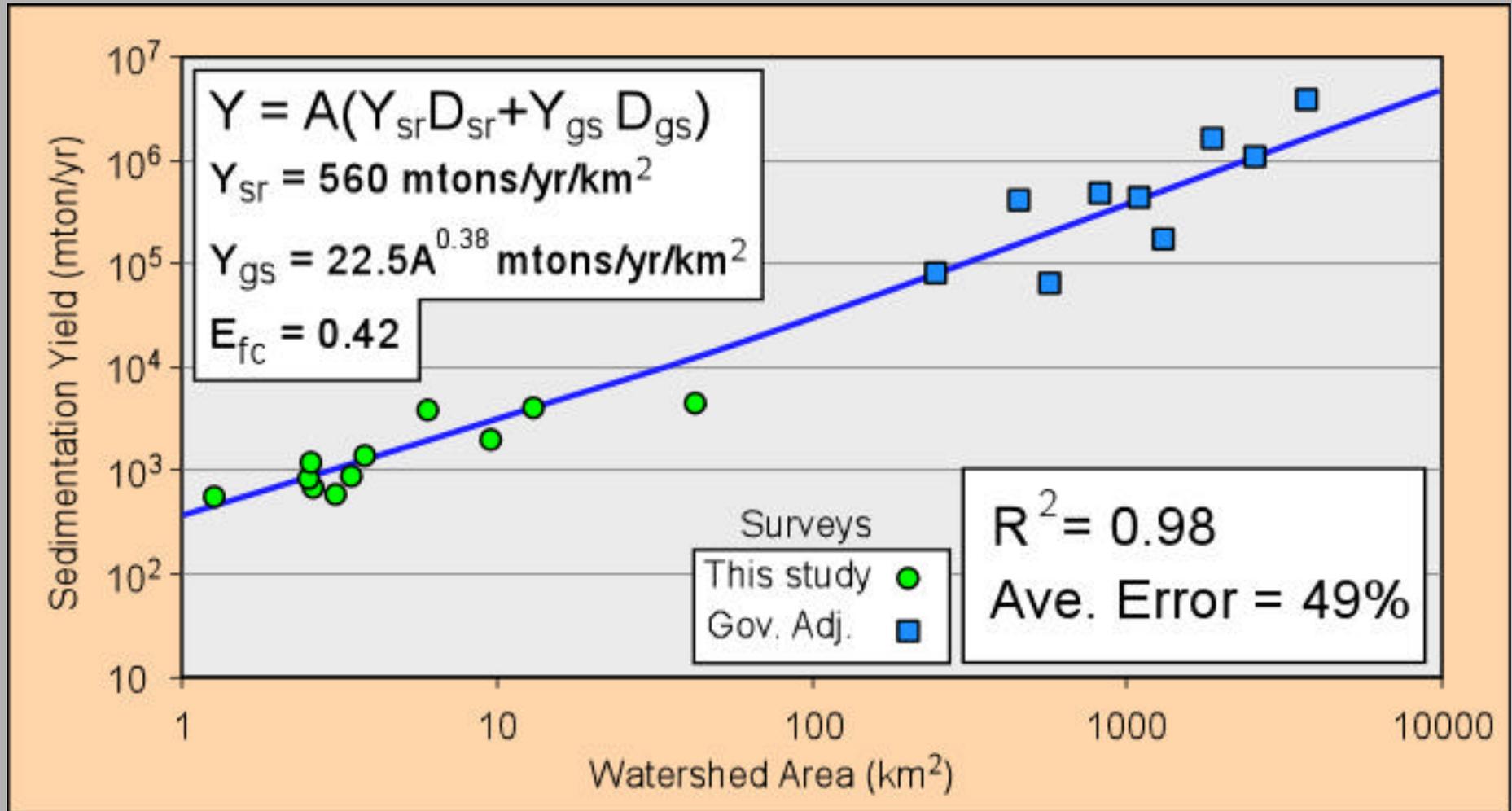
Adjusting Greiner's Yields



Adjusting Greiner's Yields



Sediment Yield with Power-Law Gully & Stream Rule



Implications for Sedimentation in Blackland Reservoirs

- **Power-law gully and stream yield**
 - 5 km² watershed → 10% from streams
 - 5000 km² watershed → 75% from streams
- **SCS reservoir trap efficiency 46%**
 - Reduction in peak stream discharge
 - Sediment trapping less important

Steam Erosion Above Richland Chambers Reservoir

