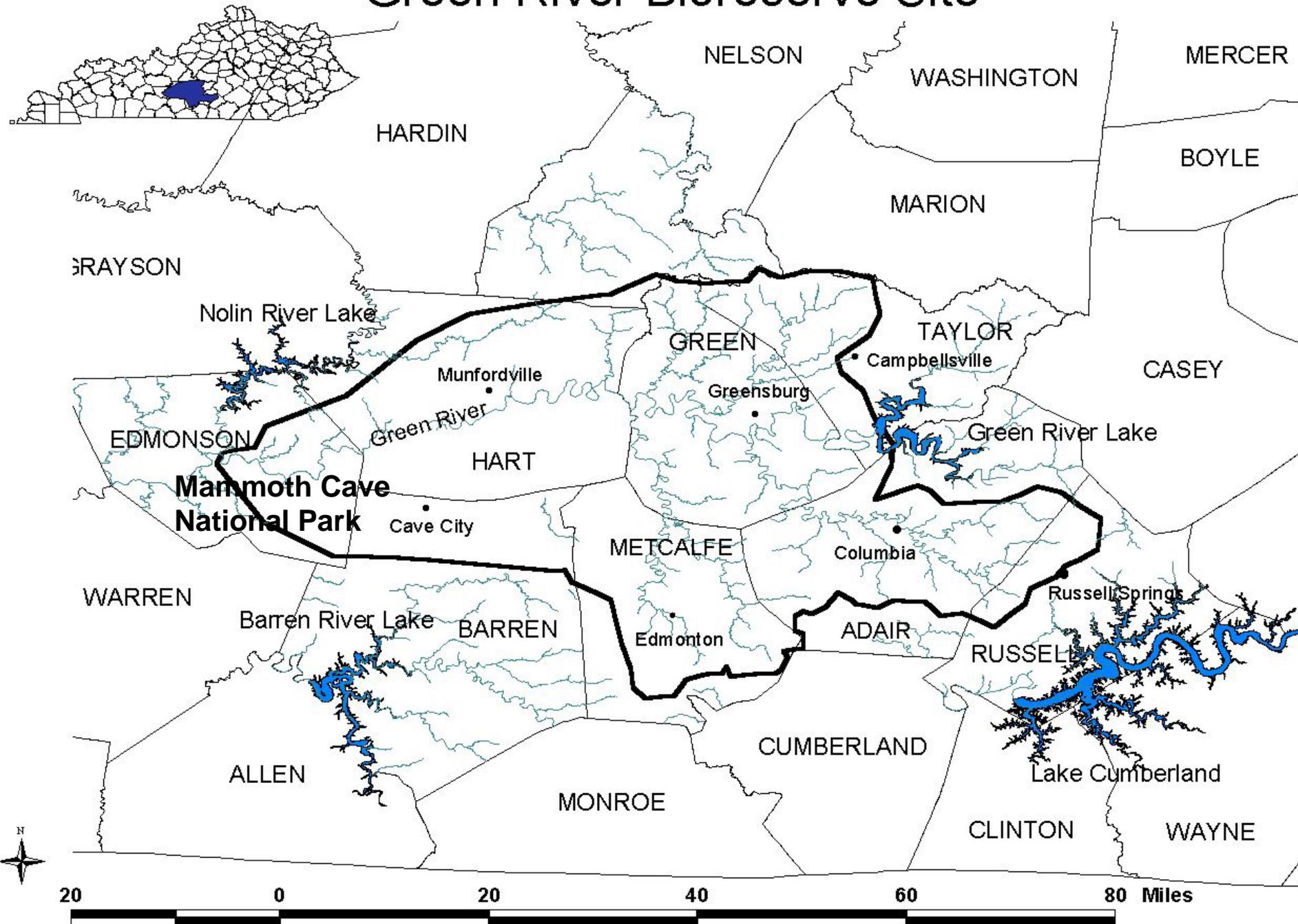




# Green River Bioreserve Site



# Green River KY

- 60 species of freshwater mussels
  - 21 imperiled
  - 7 endangered (federal)
- 151 fish species
  - 6 endemic
  - 12 globally rare
- Mammoth Cave Complex







# Effort-To-Date

- Green River Reoperation
- 1135 Project Downstream (Handy Project)
- Collecting Water-Temp Within Basin (TNC, USGS, USACE)
- CREP Program (USDA, KDFWR, TNC, KDOC)
- Mathematical Model Simulation (USACE, TNC)
- Fish and Mussel Monitoring (TNC)
- Removal L/D 6

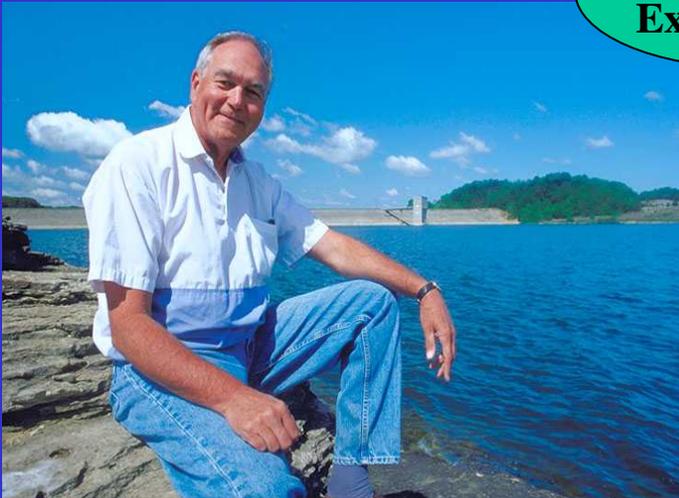
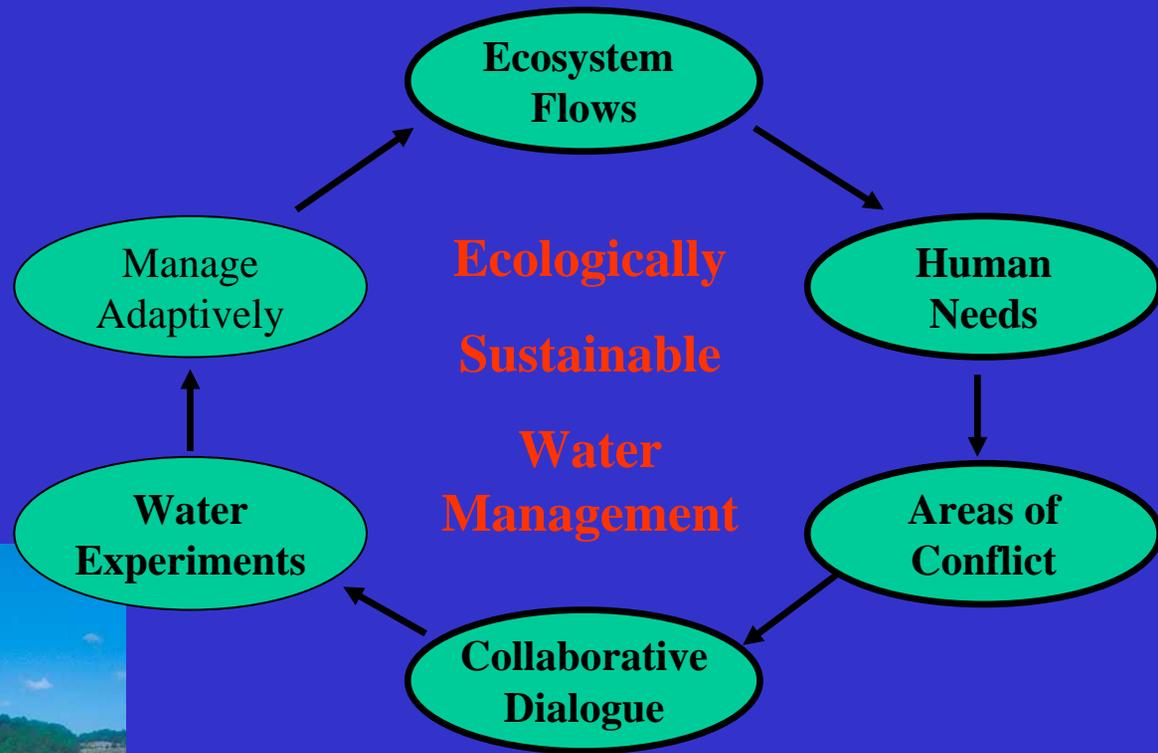
# Re-Operation of the Green River Dam

*A Collaborative Project between the Louisville District and TNC*

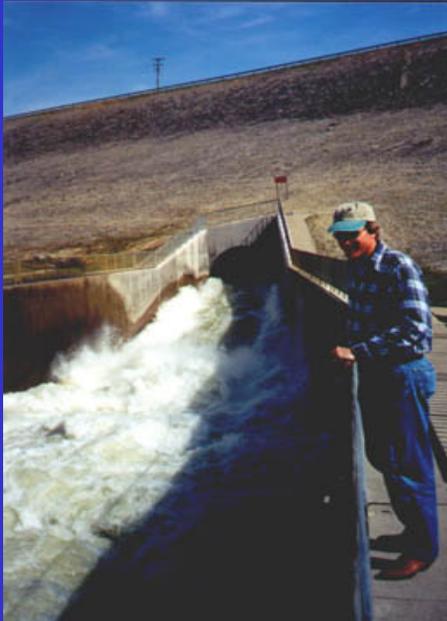
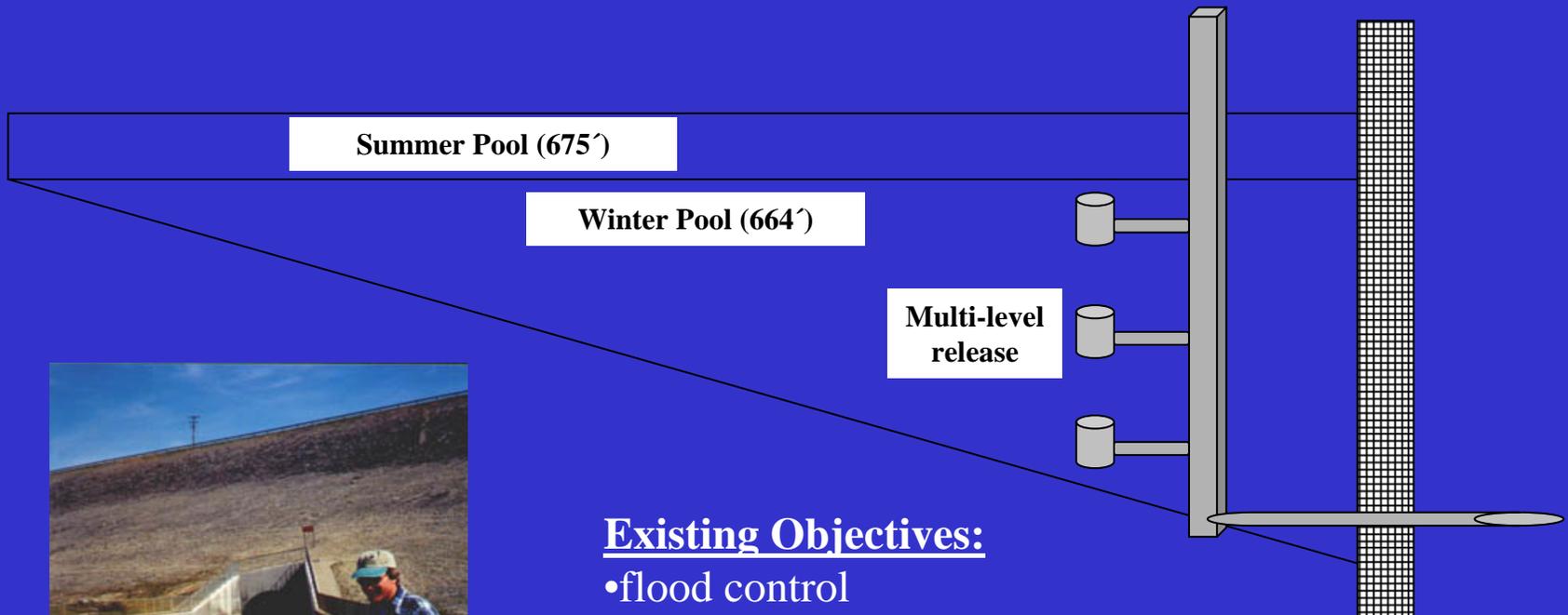


# Green River KY

Working toward Ecologically Sustainable  
Water Management



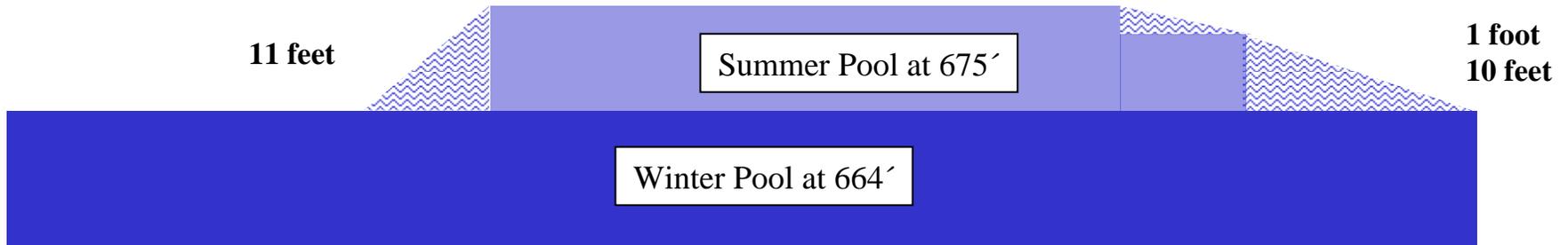
# Green River Dam



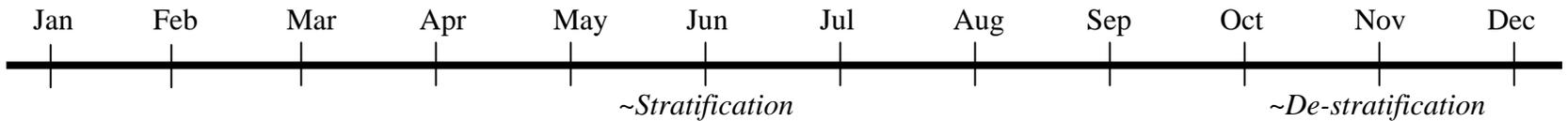
## Existing Objectives:

- flood control
- recreation
- water supply
- water quality
- low flow
- fish & wildlife

# Green River Dam



## Current Operation

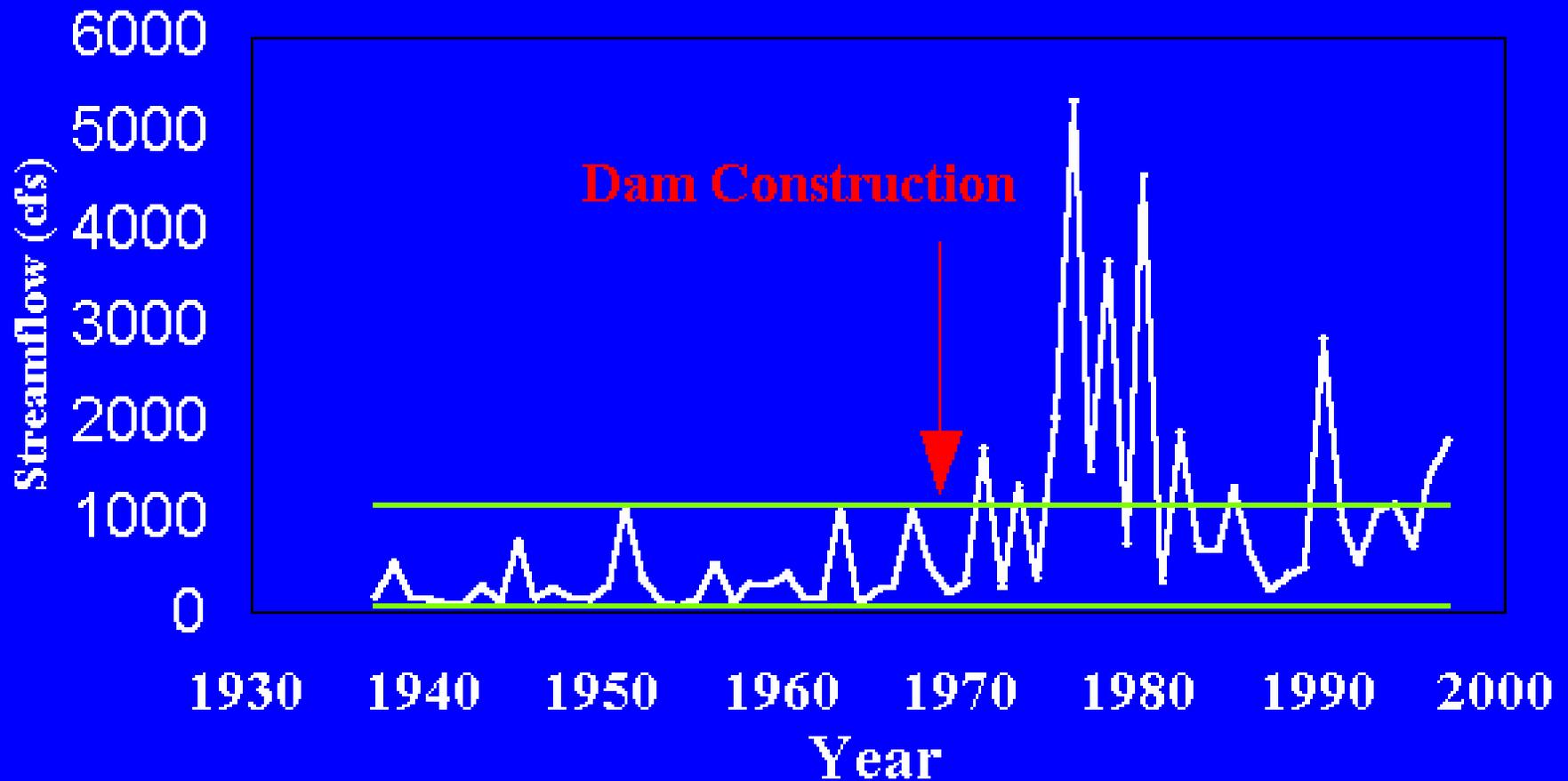


## Experimental Operation

*Varied release rates*

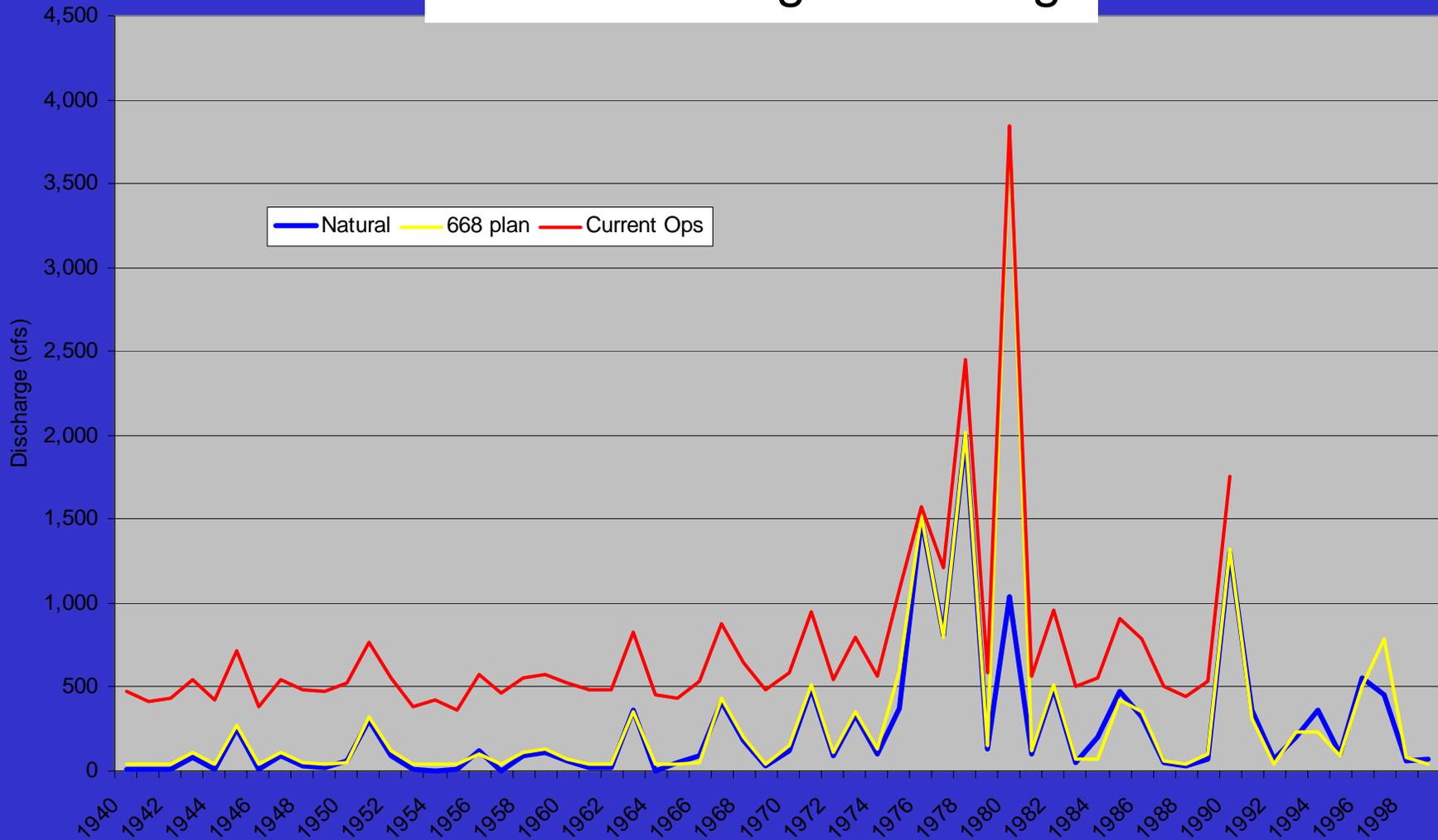
# Green River at Munfordville, KY

## October flows



— Natural Range of Variability

# Green River Dam October Average Discharge



# Operational Modifications

- Delayed Filling
- Delayed Drawdown
- Increase Winter Pool
- Increase Max Q During Non-Crop Season- 6200 cfs to 8,000 cfs
- Increase Max Q During Crop Season- 4400 cfs to 5300 cfs
- Increase Flood Releases During Non-Crop Season- 300 cfs to 1000 cfs After Flood Peak

# Environmental Impacts

- Decrease Cold-Water Discharges in Spring
  - Improve Indicator of Hydrologic Alteration
- Improve WQ In Lake
  - Lowers Spring Chlorophyll Concentrations
  - KDFWR concerned re:black crappie spring spawn
- Improves Early Fall Flow and Temp Pattern
- Improved reproduction of fall breeding aquatic species
- Recreation season lengthened in Fall
- Some improvement in downstream water temperatures in spring

# Challenges for Future Success

- Conservation Easements
- Local Sponsor Cost-Share
- Structural Constraints
- Monitoring/Measures of Success
- Guideline Development
- Improved Gauge Data
- Maintain Long-term Project Continuity
- Build on GR Conservation Partnership

# Handy August 2002

