

Frenchman Valley Appraisal Study

McCook Field Office

→ August 24, 2007

Bureau of Reclamation
Nebraska-Kansas Area Office

Purpose

- Develop and evaluate alternative water management scenarios which may assist partners/stakeholders in future planning
- To determine if there is a need for further Federal involvement in participating in a cost-share Feasibility Study

Concerns

- Water demands exceed available supplies
- Declining Streamflows above and below Enders, affecting:
 - Irrigation Districts
 - Federal Investment
 - Groundwater Recharge
 - Recreation, Fish & Wildlife
- Compact Compliance
- Declining Groundwater Levels
- Water Quality

Objectives

- Optimize the economic and environmental benefits of the water resources in the study area
 - Optimize economic benefits of surface and groundwater irrigation in the study area
 - Optimize economic benefits of Enders Reservoir for recreation, fish and wildlife
 - Evaluate environmental benefits of recreation, fish and wildlife
 - Evaluate economic benefit of flood control provided by Enders Dam
 - Provide alternative water management scenarios to aide partners/stakeholders in future planning

Potential Opportunities

- Continue existing surface water irrigation operations
- Utilize natural flows and/or Enders storage to provide intentional groundwater recharge
- Utilize Enders for recreation, fish and wildlife
- Utilize natural flows and/or Enders storage for Compact compliance
- Increase restrictions and/or provide incentives to reduce groundwater consumption and improve streamflows
- Implement some combination of the above

Study Partners

- Bureau of Reclamation
- Nebraska Department of Natural Resources
- Frenchman Valley Irrigation District
- Hitchcock & Red Willow Irrigation District
- Riverside Irrigation District
- Middle Republican Natural Resource District
- Upper Republican Natural Resource District
- Nebraska Game & Parks Commission

Study Area

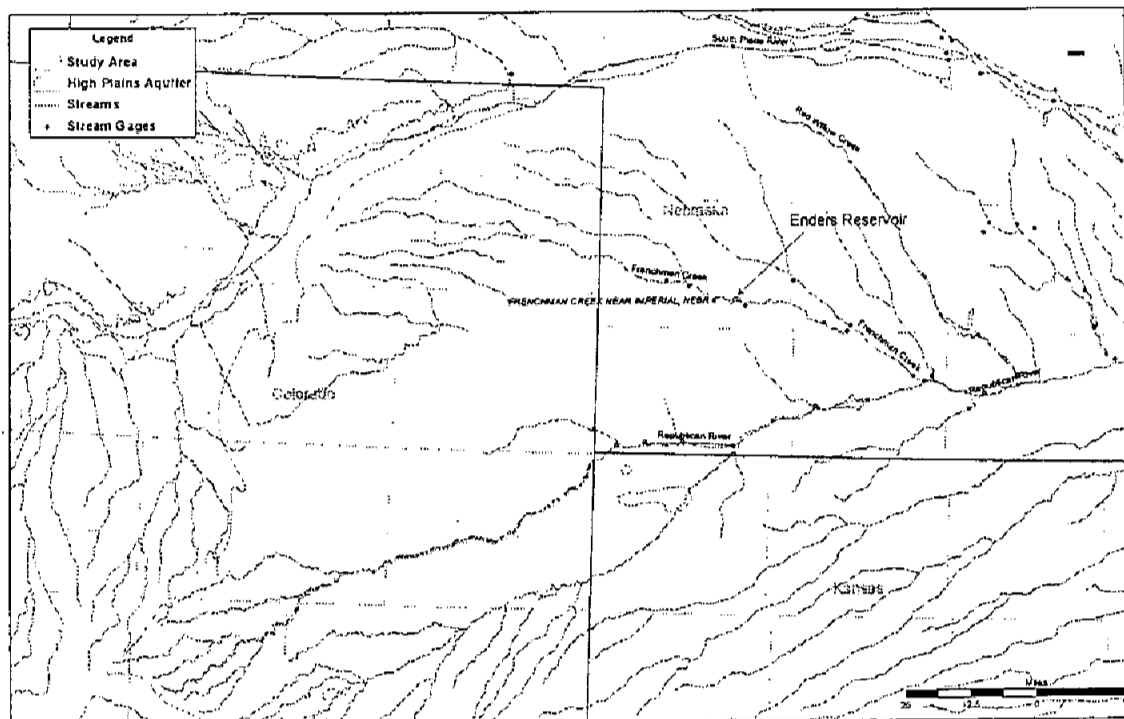
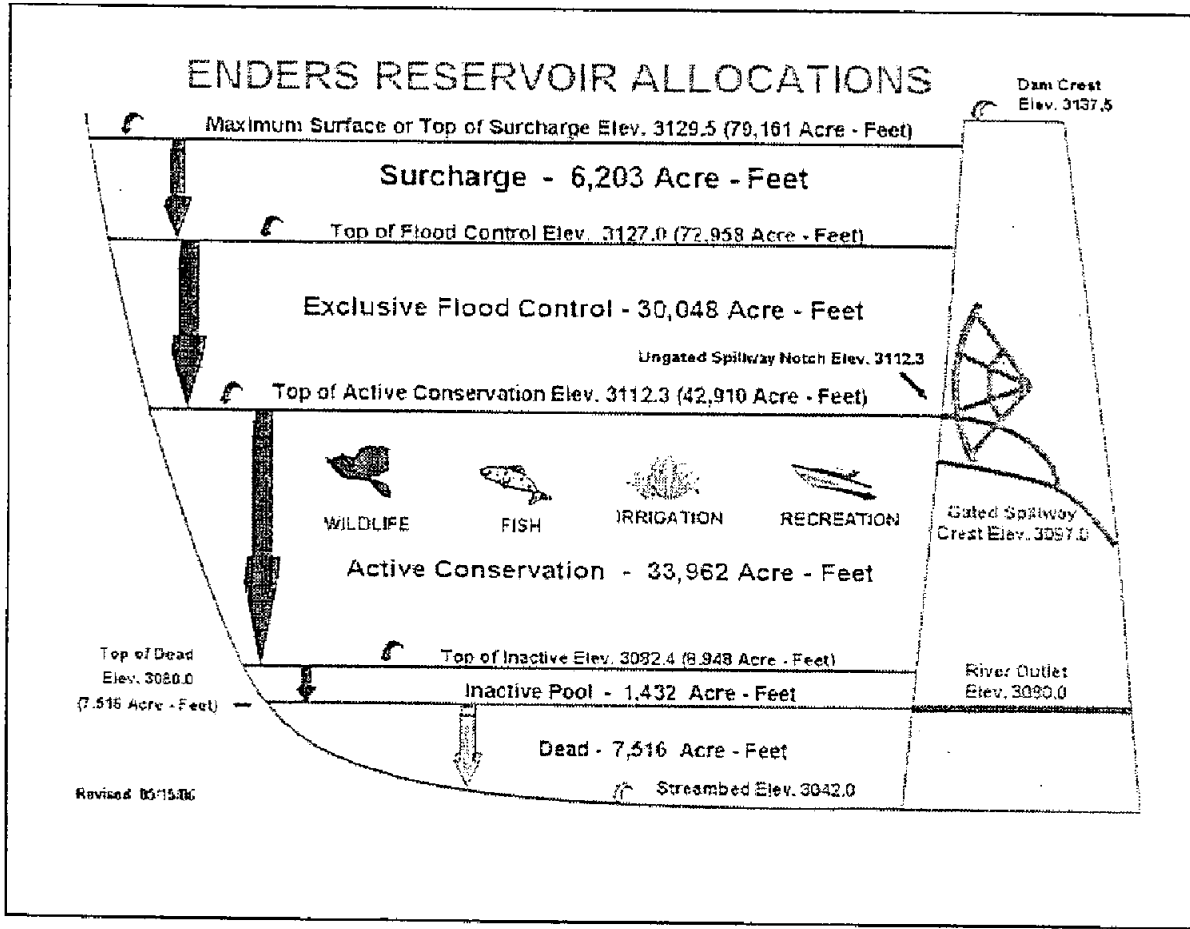


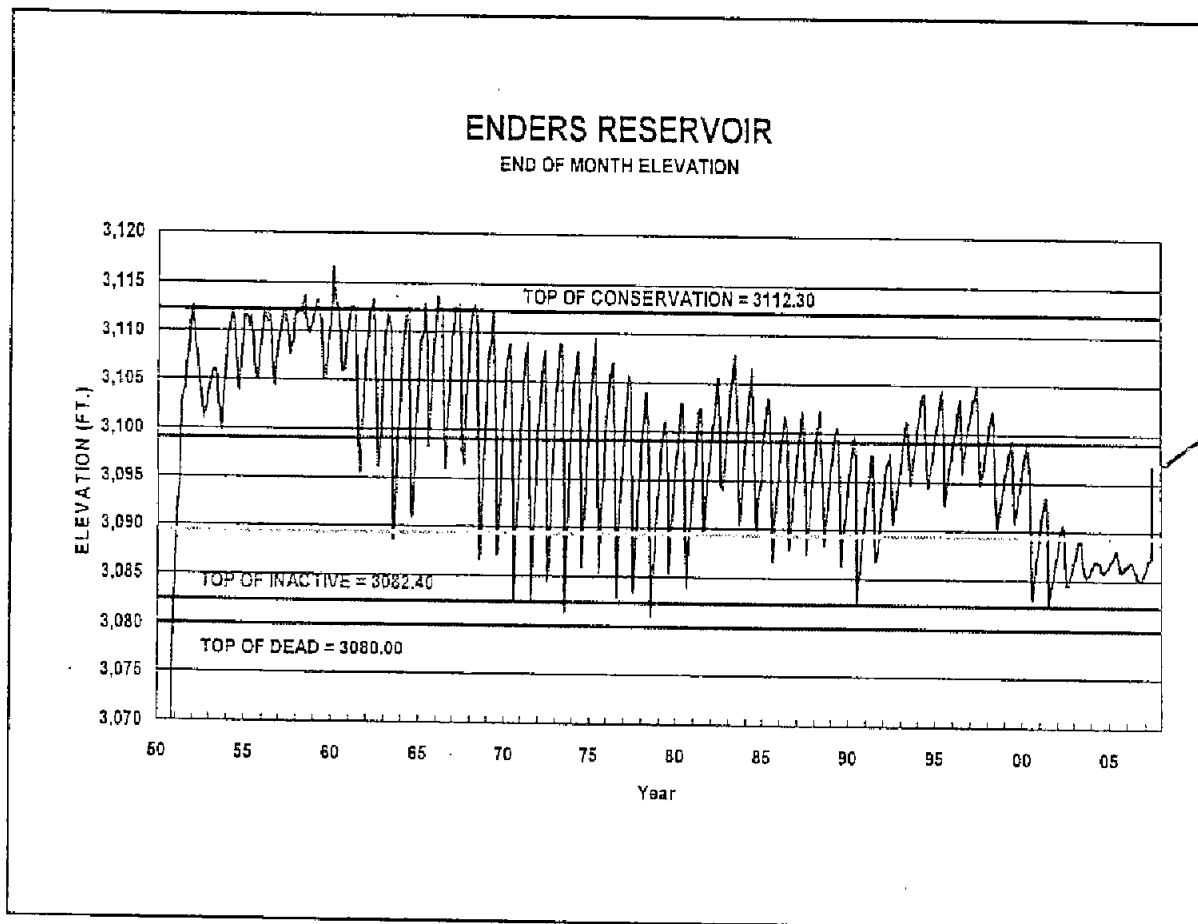
Figure 1. Map of Study Area for Enders Dam Modeling Study.

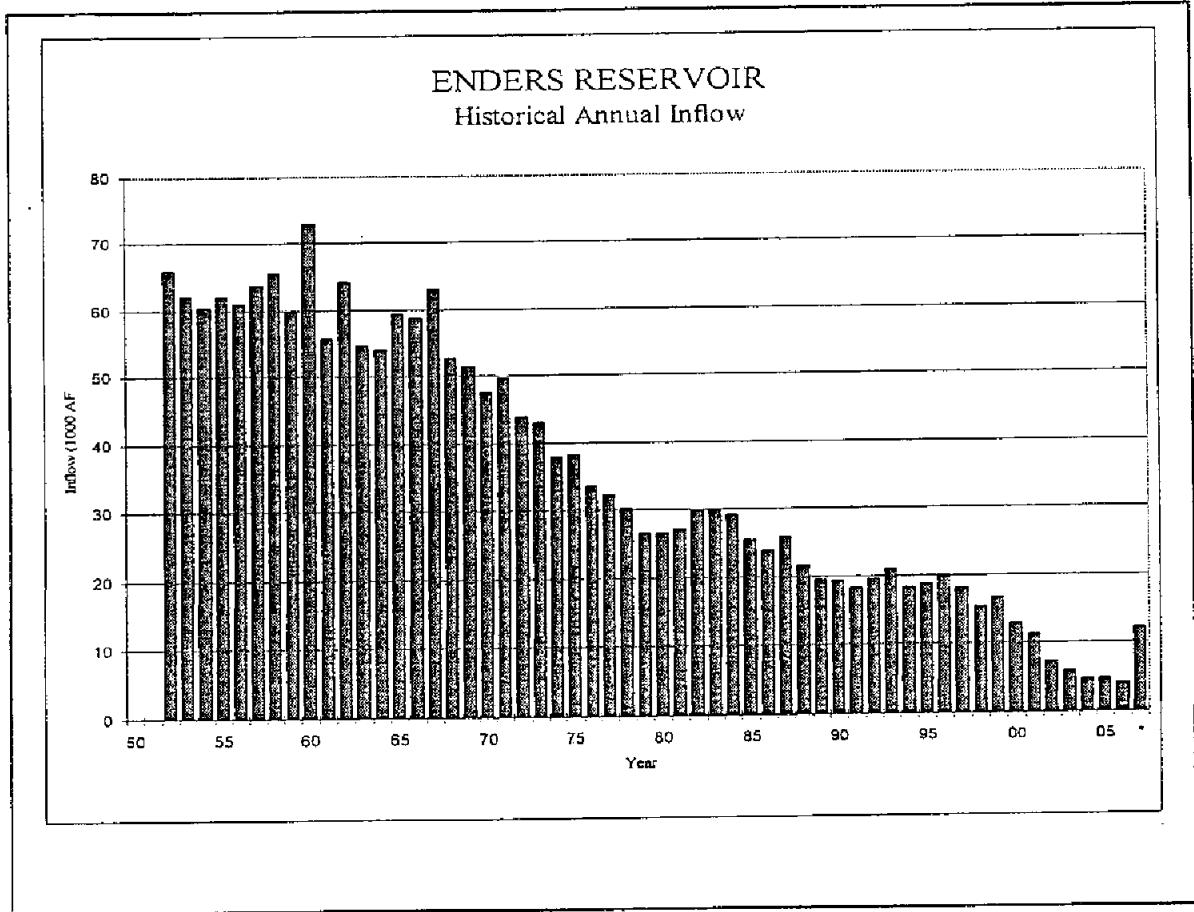
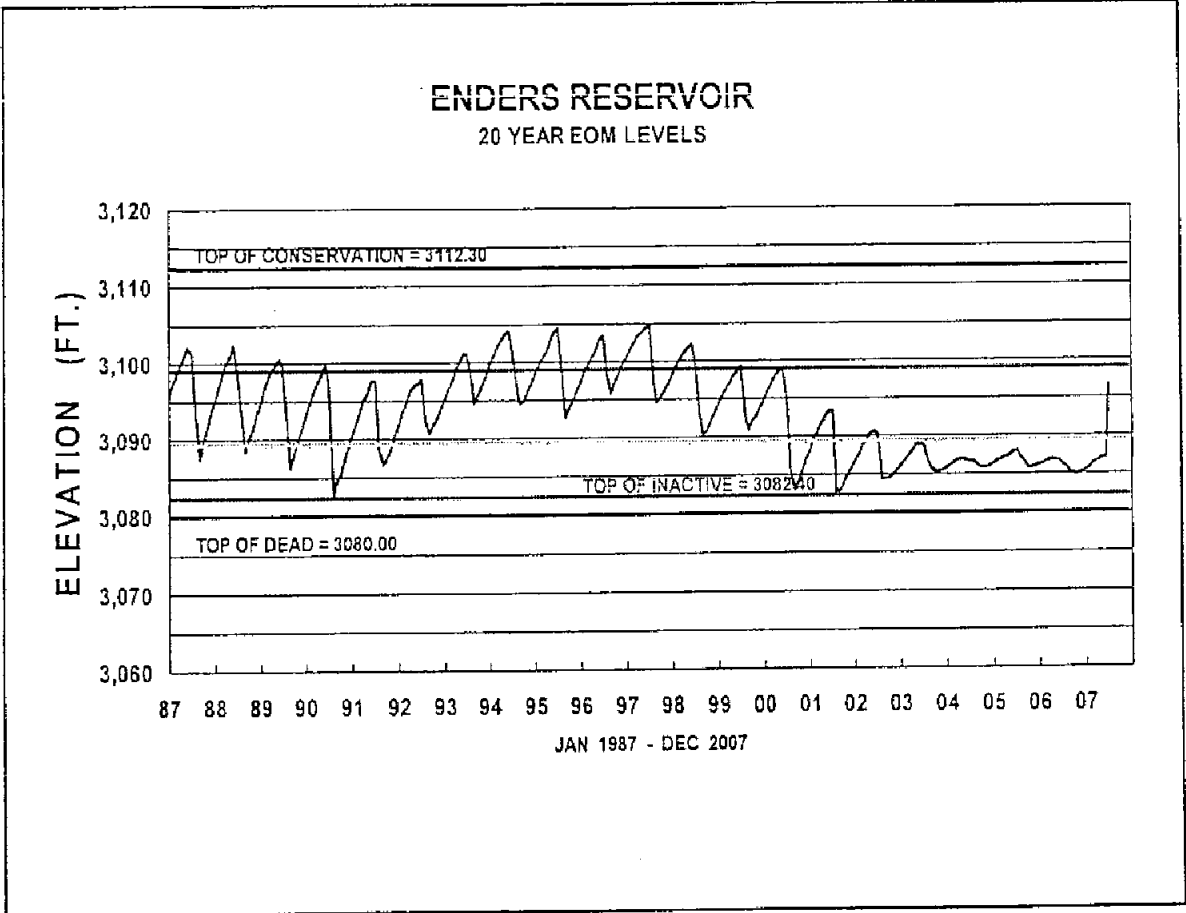
History

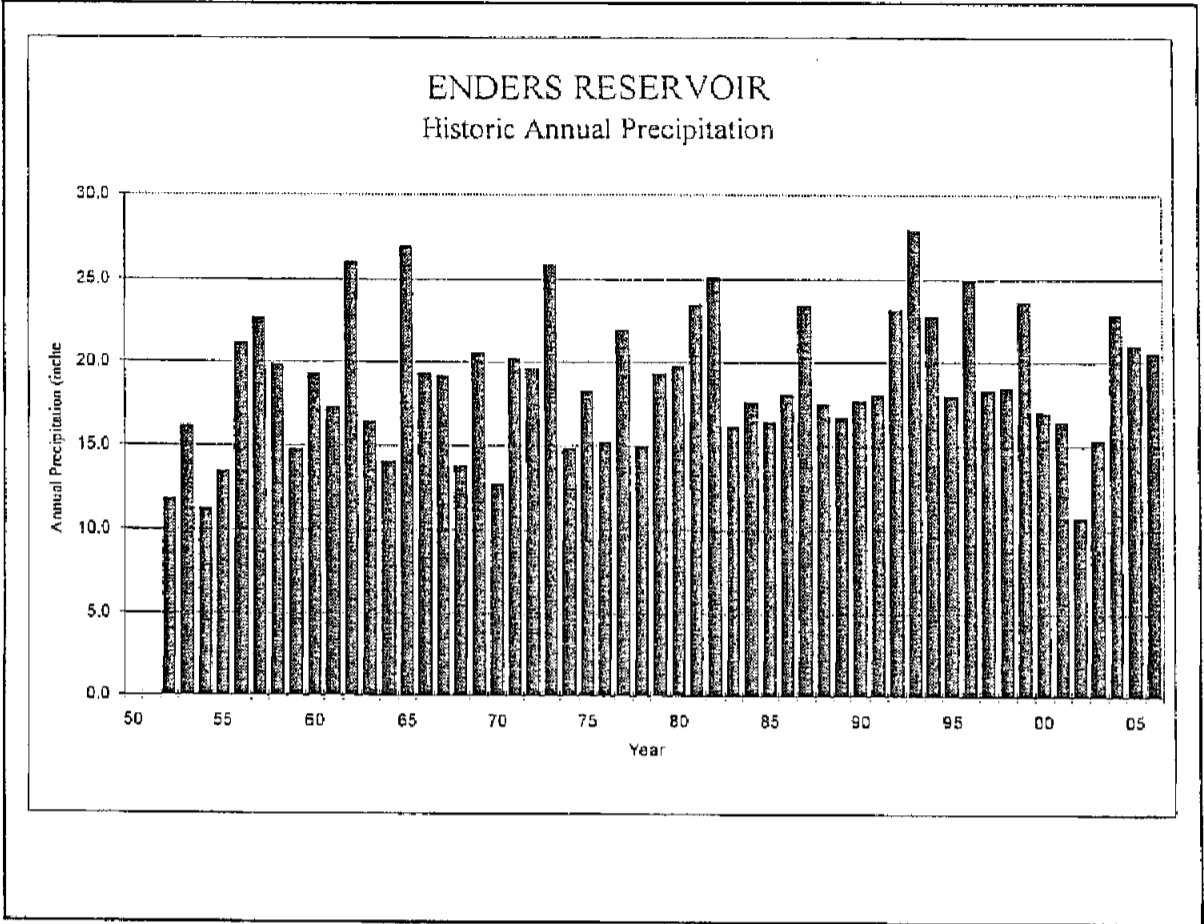
- Frenchman Valley Irrigation District
 - 1890 Natural Flow Right
- H&RW Irrigation District
 - 1946 Natural Flow Right
- Enders Reservoir completed in 1951
- Reclamation
 - 1946 Storage Right for Enders Reservoir
 - 1954 Storage Use Right
 - Enders Storage Use for FVID, H&RWID, FCID, Bostwick ID in Neb
- Water first delivered from Enders to FVID in 1958 and to H&RWID in 1961



*TODAY
3095 (approx.)*

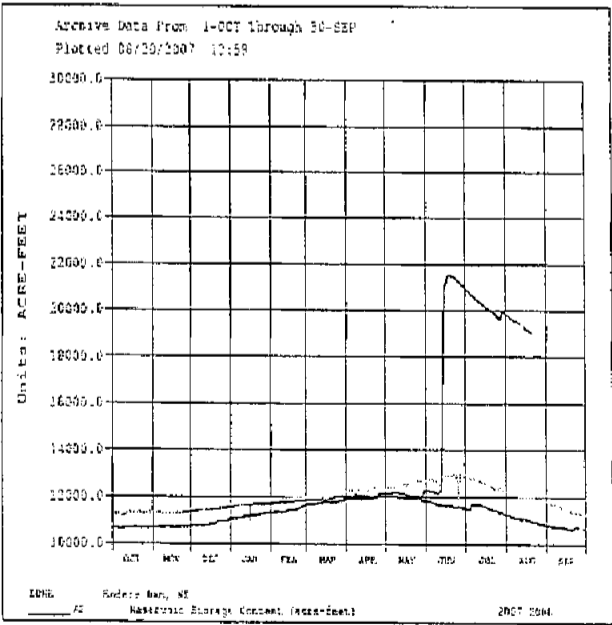






Since 2004

- Reservoir levels near base of conservation pool
- Region above Imperial received 6-12 inches of rain in June 2007
- Brought reservoir up around 10 ft
- Conservation pool now about 50% full



Scope of Work

- **Phase I – Preliminary Groundwater Modeling Phase**
 - Utilize RRCM to simulate a limited set of rainfall and water use scenarios
 - NDNR lead - complete
- **Phase II – Secondary Groundwater Modeling Phase**
 - Develop No Action or Future Without Condition - Reclamation
 - Use results of Phase I to determine desired model refinements (NDNR) and define additional model scenarios (All cooperating agencies)
- **Phase III – Resource Optimization Studies**
 - Evaluation of selected alternatives
 - Evaluate selected alternatives vs. No Action/Future Without