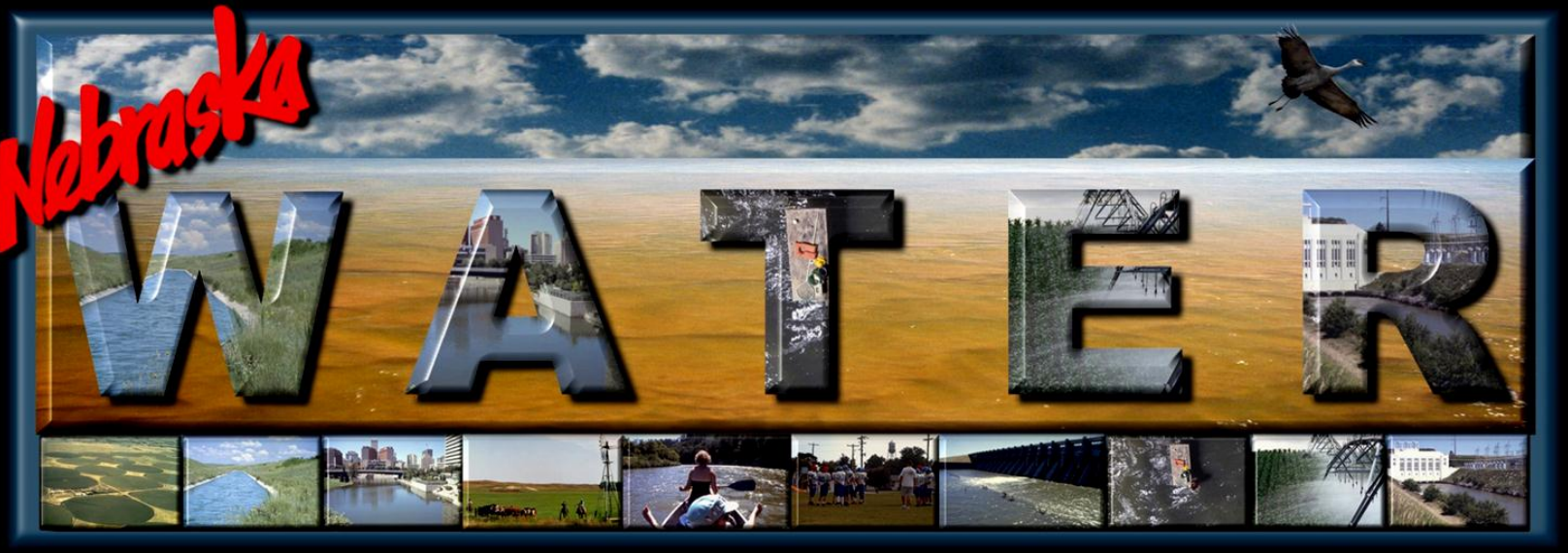


Conjunctive Water Management

In Modeling and in Practice

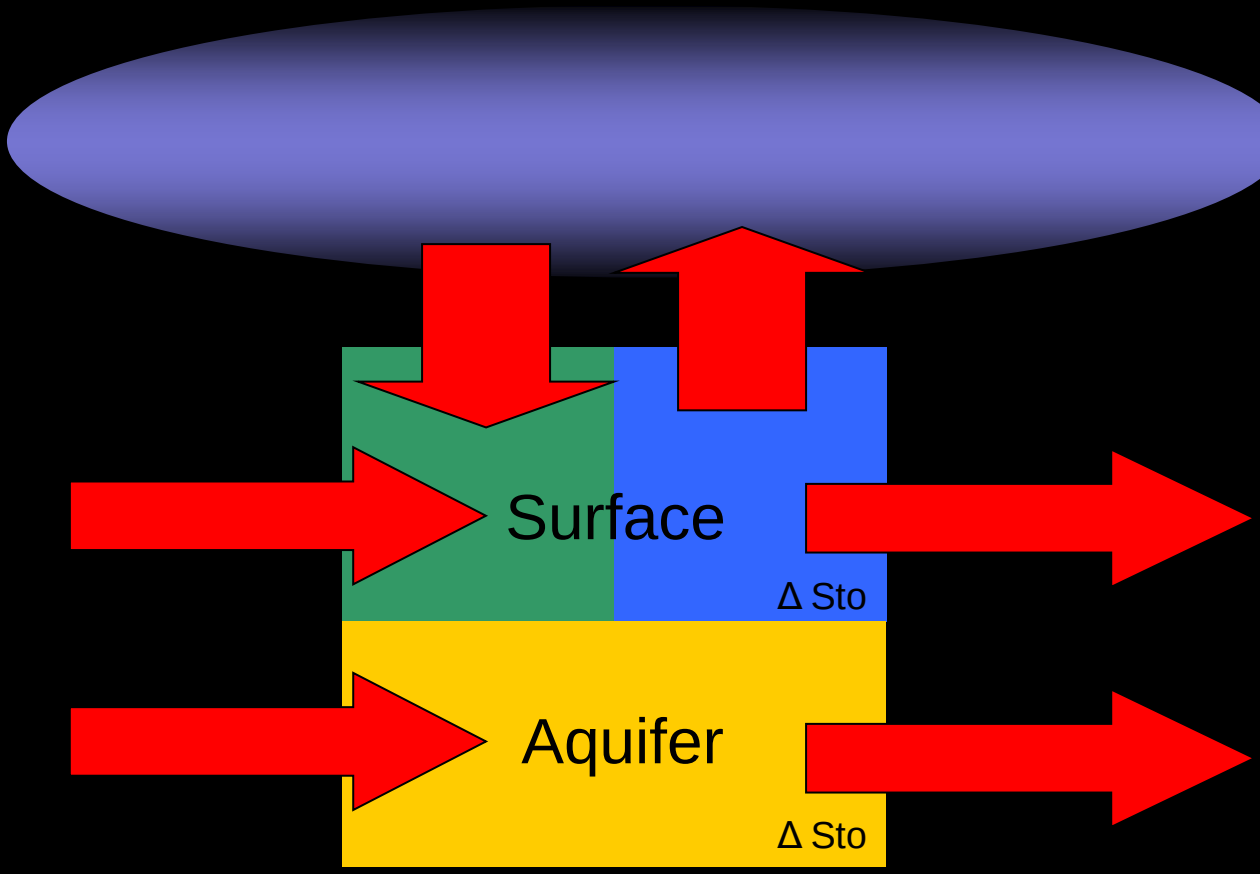
Association of Western State Engineers
Spring Workshop
Medora, North Dakota
June 5, 2012
Doug Hallum, P.G.
Integrated Water Management Coordinator
Nebraska Department of Natural Resources

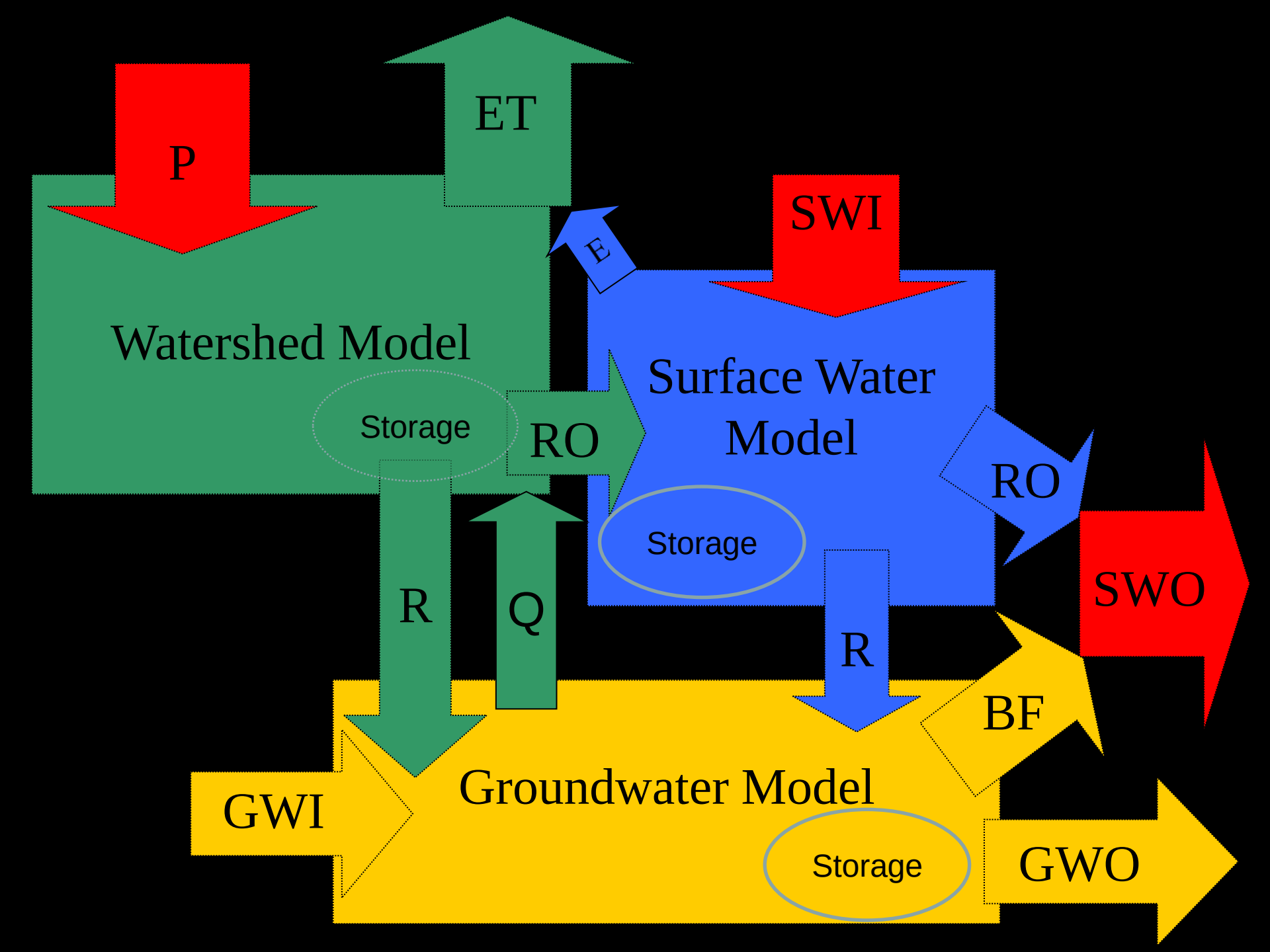
Nebraska
Department of Natural Resources

Overview

- CWM in Modeling
  - Modeling for the purpose of CWM
- CWM in Practice
  - Management controls: Allocation, Acres, Appropriation
  - Unappropriated flows
- Conclusions

CWM in Modeling

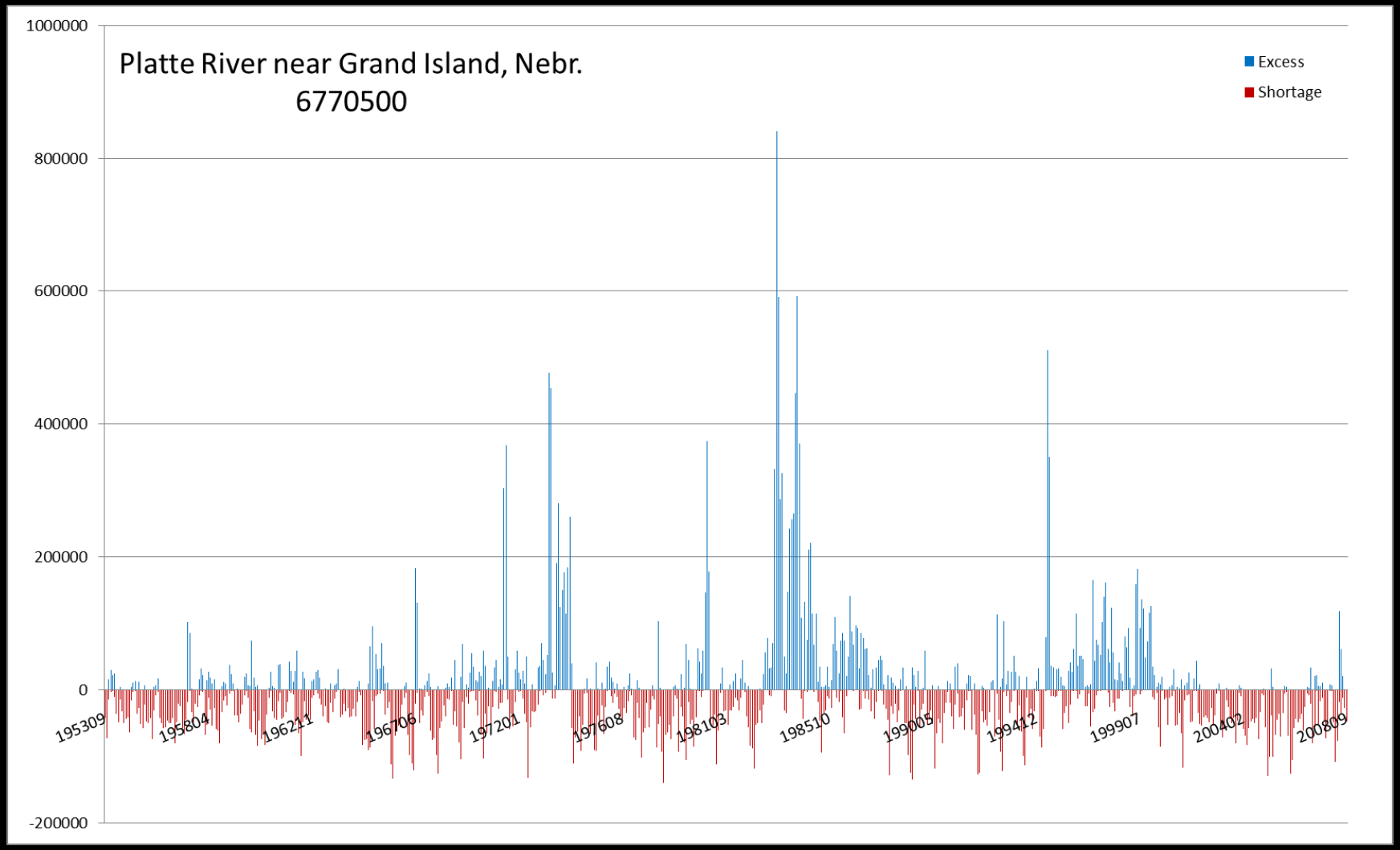



P
ET
E
SWI
Watershed Model
Storage
RO
Surface Water Model
RO
Storage
SWO
R
Q
R
BF
GWI
Groundwater Model
Storage
GWO

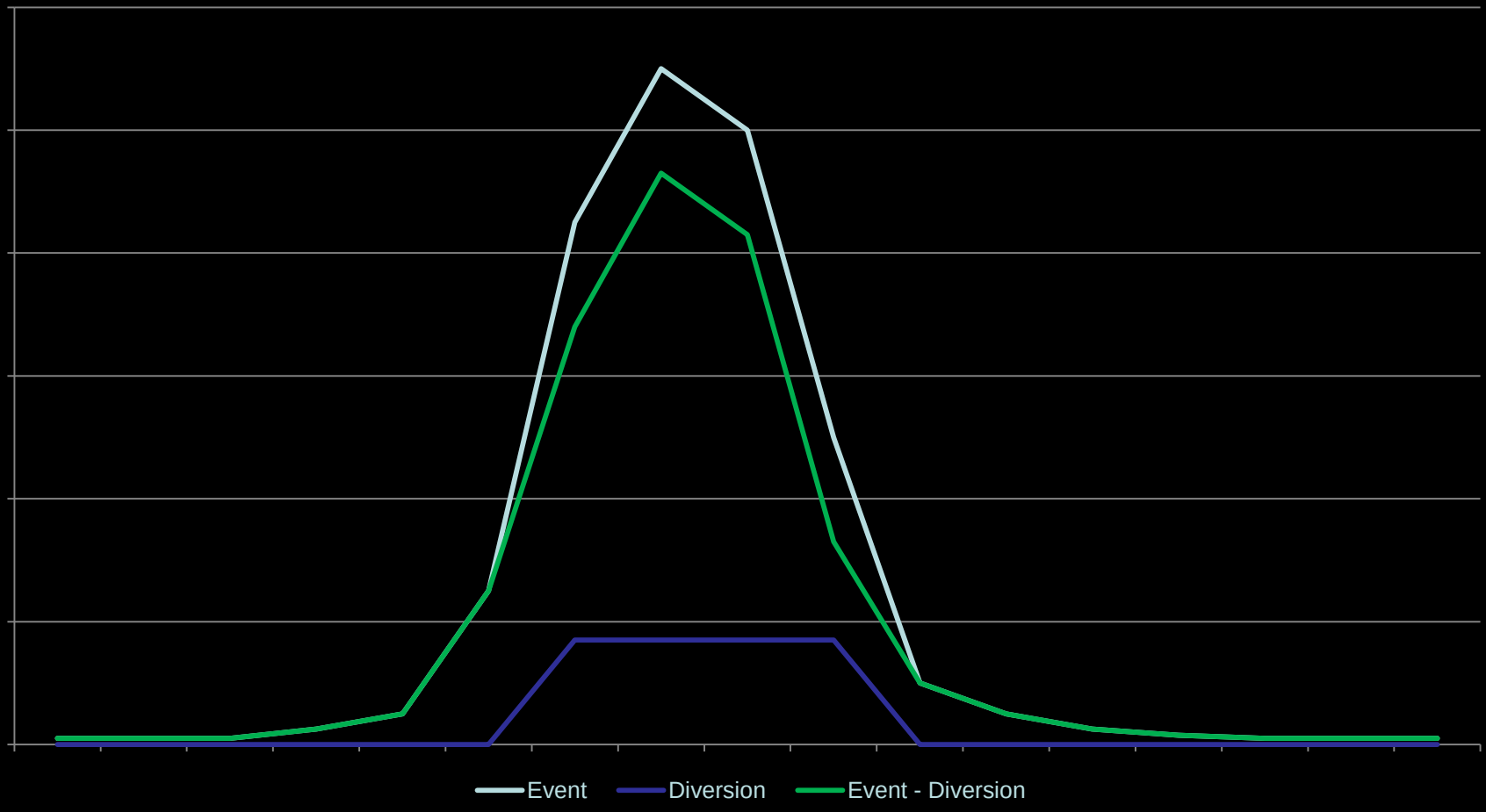
CWM in Practice

- Unappropriated Flows

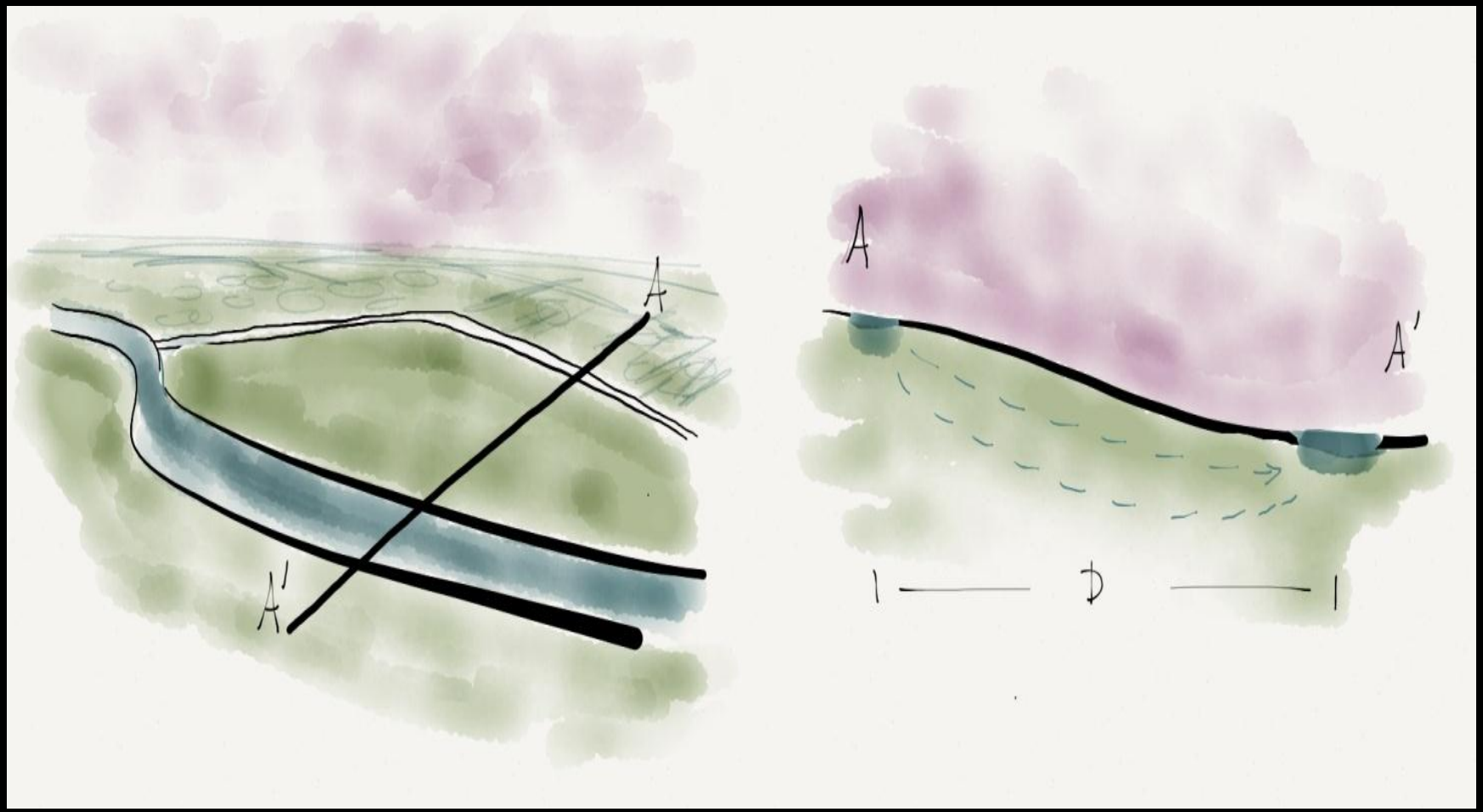
Unappropriated Flows



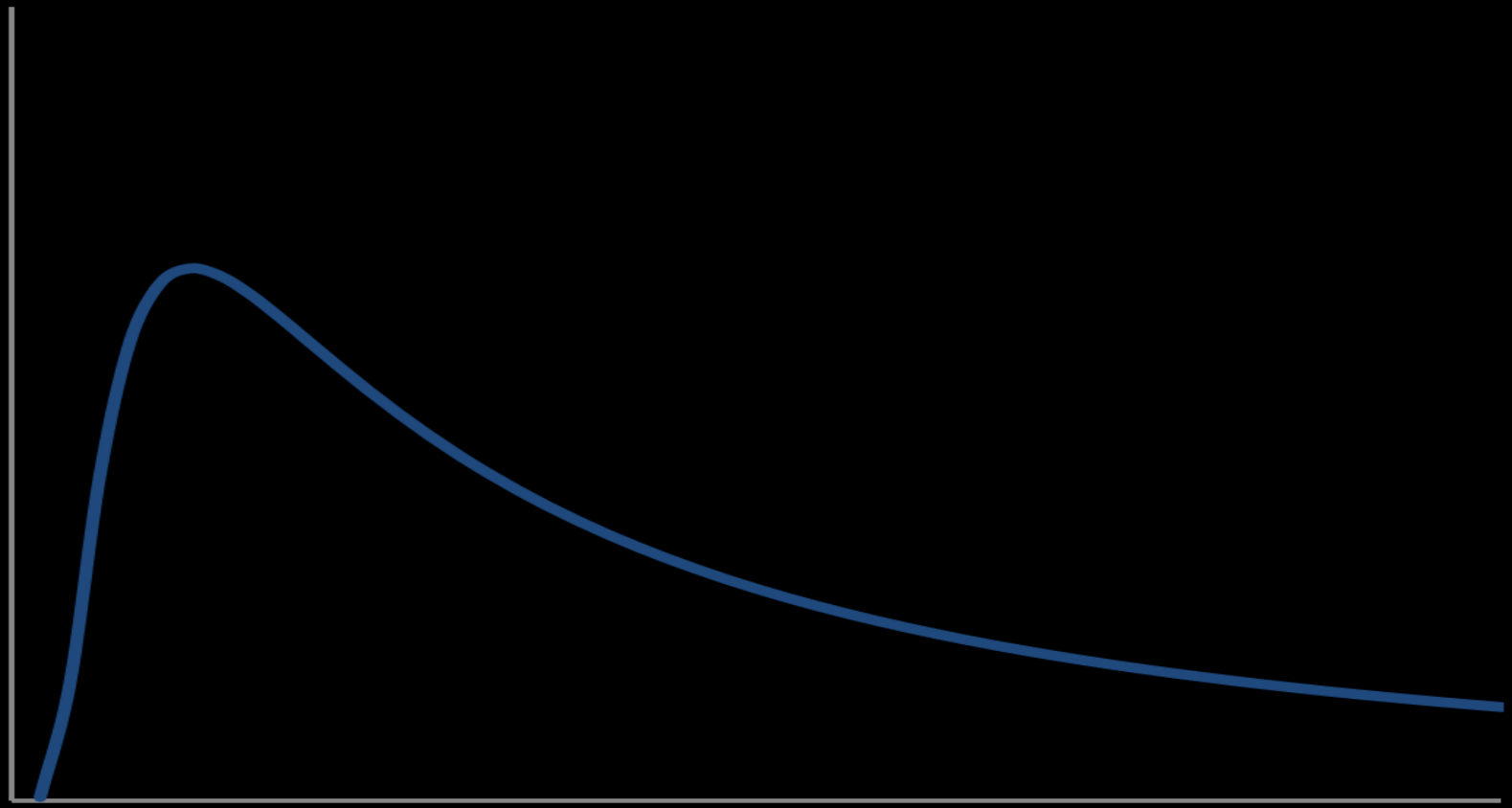
Event



GW Storage and Return



Return Flow Accretion



2011 Demonstration

Project successes:

1. Diversion: 200,000 acre-feet
2. Seepage: 90,000 acre-feet
3. 10 year Accretion: 20,000 acre-feet

Conclusions

1. Modeling for CWM requires sophisticated tools to reduce uncertainty and understand temporal and spatial effects of actions
2. Nebraska has tools in place or in development to support meaningful assessment of CWM actions
3. Nebraska is actively managing its water resources in ways that its tools will help explain

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