

WYOMING WATER MANAGEMENT AND CONSERVATION

WYOMING STATE ENGINEER'S OFFICE
AND THE UNITED STATES BUREAU OF
RECLAMATION

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WATER CONSERVATION OFFICER

It is the intent of this effort to research, discuss, document and organize water management and conservation information which will ultimately be available to water users and the public for use in making decisions relating to voluntary water conservation implementation.

WYOMING WATER MANAGEMENT AND CONSERVATION OBJECTIVES

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- **investigate water conservation strategies most beneficial to irrigation districts, land owners, municipalities, industry and fish and wildlife**

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- **identify sources of assistance for implementing water conservation practices**

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- evaluate impacts to surface and ground water by water conservation measures
- identify sources of assistance for implementing water conservation practices
- research water law and regulations in Wyoming and other western states for options in providing incentives that encourage wise use

ACTIVITIES TO ADDRESS AND REACH OBJECTIVES

- RESEARCH AND REVIEW
- PUBLIC OUTREACH
- STATE WATER PLAN

CONSERVATION COMPONENT

CONSERVATION CONCEPTS

LOWER BASIN REACH

DIRT CANALS AND DITCHES



**DIRT DITCH BEFORE
LINING**



**DIRT DITCH AFTER LINING
REDUCES CONVEYANCE LOSS**





**EFFICIENCY OF
APPLICATION**

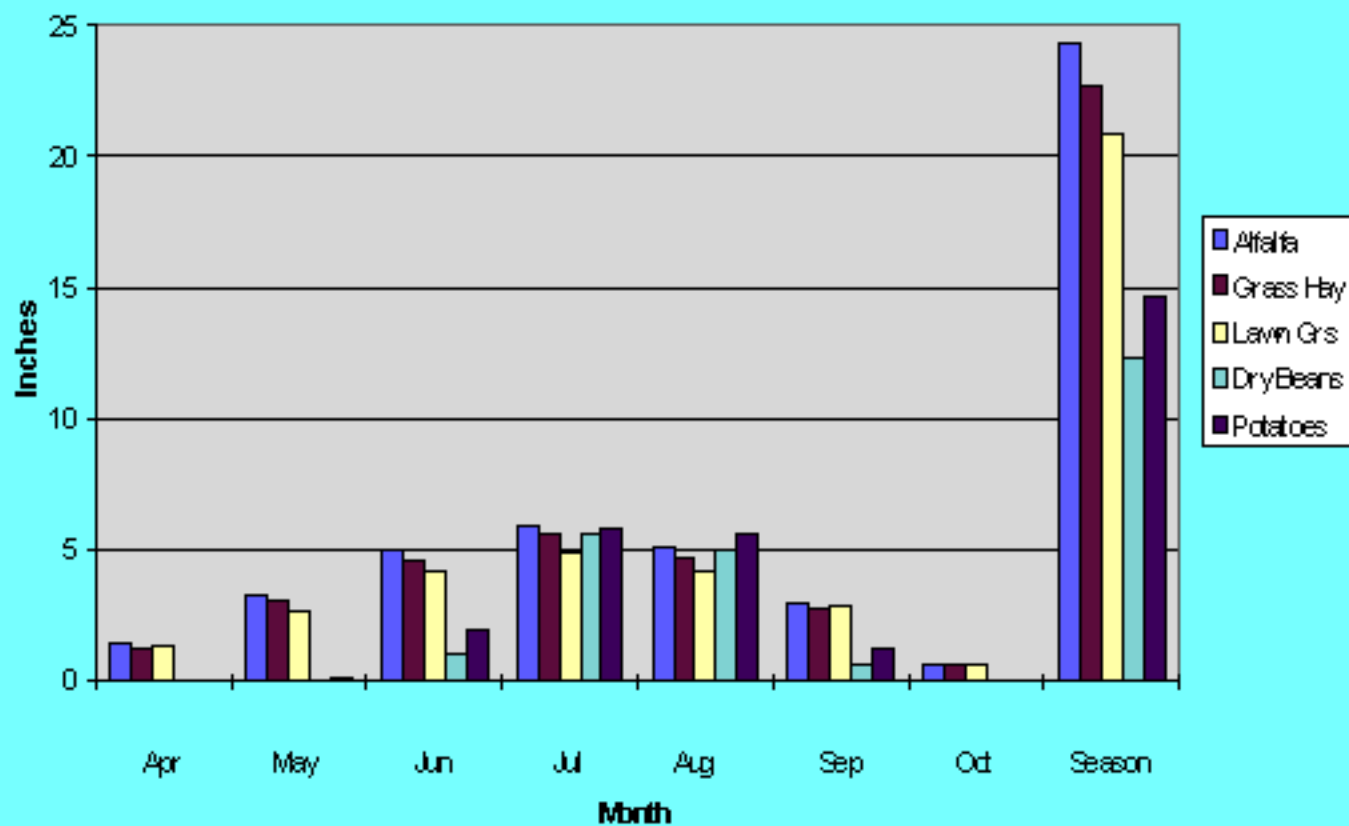
**25% WATER LOSS
DUE TO WIND
DRIFT,
EVAPORATION,
ETC.**



**EFFICIENCY OF
APPLICATION**

**10% WATER
LOSS DUE TO
WIND DRIFT,
EVAPORATION,
ETC.**

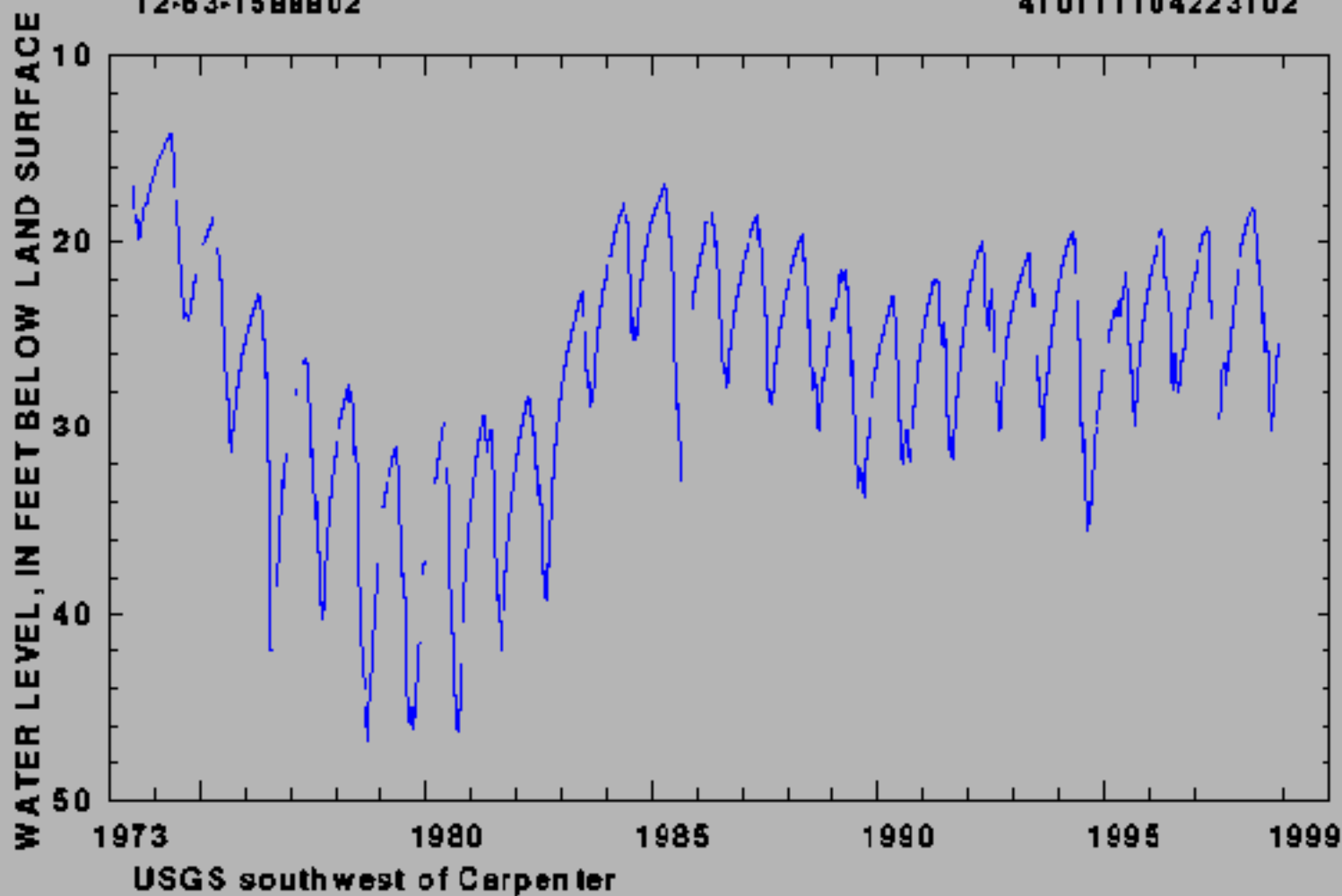
CIR-Cheyenne



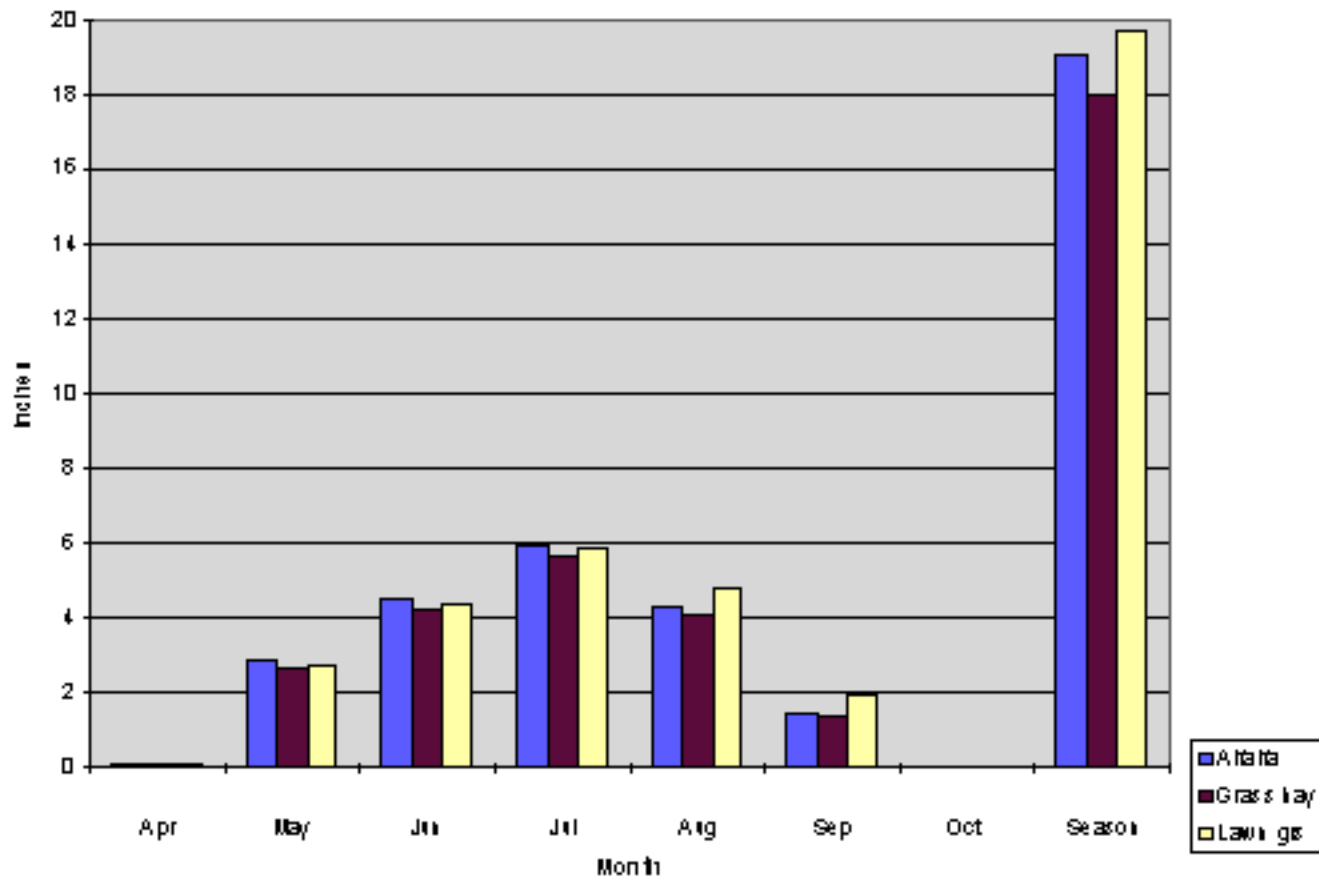
LARAMIE COUNTY

12-63-15 WNW 02

41 01 11 10 42 23 10 2



CIR-Kemmerer



CONSERVATION CONCEPTS

UPPER BASIN REACH



- **UPPER BASIN WATER
IMPOUNDMENTS**
- **DELAYED RELEASE OF
SPRING RUN OFF**



- WATER QUALITY
- DISSIPATION OF ENERGY
- TRAP SEDIMENT



- STREAM BANK STORAGE
- RETURN FLOWS
- STREAM BANK STABILITY



- **ABANDONED,
FILLED BEAVER
POND**
- **DIVERSITY OF
PLANT
COMMUNITY**
- **LIVESTOCK AND
WILDLIFE FORAGE
PRODUCTION**

**RIPARIAN ZONES THEN AND NOW:
AN ENHANCED ENVIRONMENT
CREATED BY AGRICULTURE**

**REGULATED RELEASE OF WATER HAS
GENERALLY ALLOWED STREAM BANKS TO
STABILIZE AT A GIVEN WIDTH AND DEPTH**

SKINNER, QUENTIN AND HILLER, JOSEPH

STREAM DYNAMIC EQUILIBRIUM

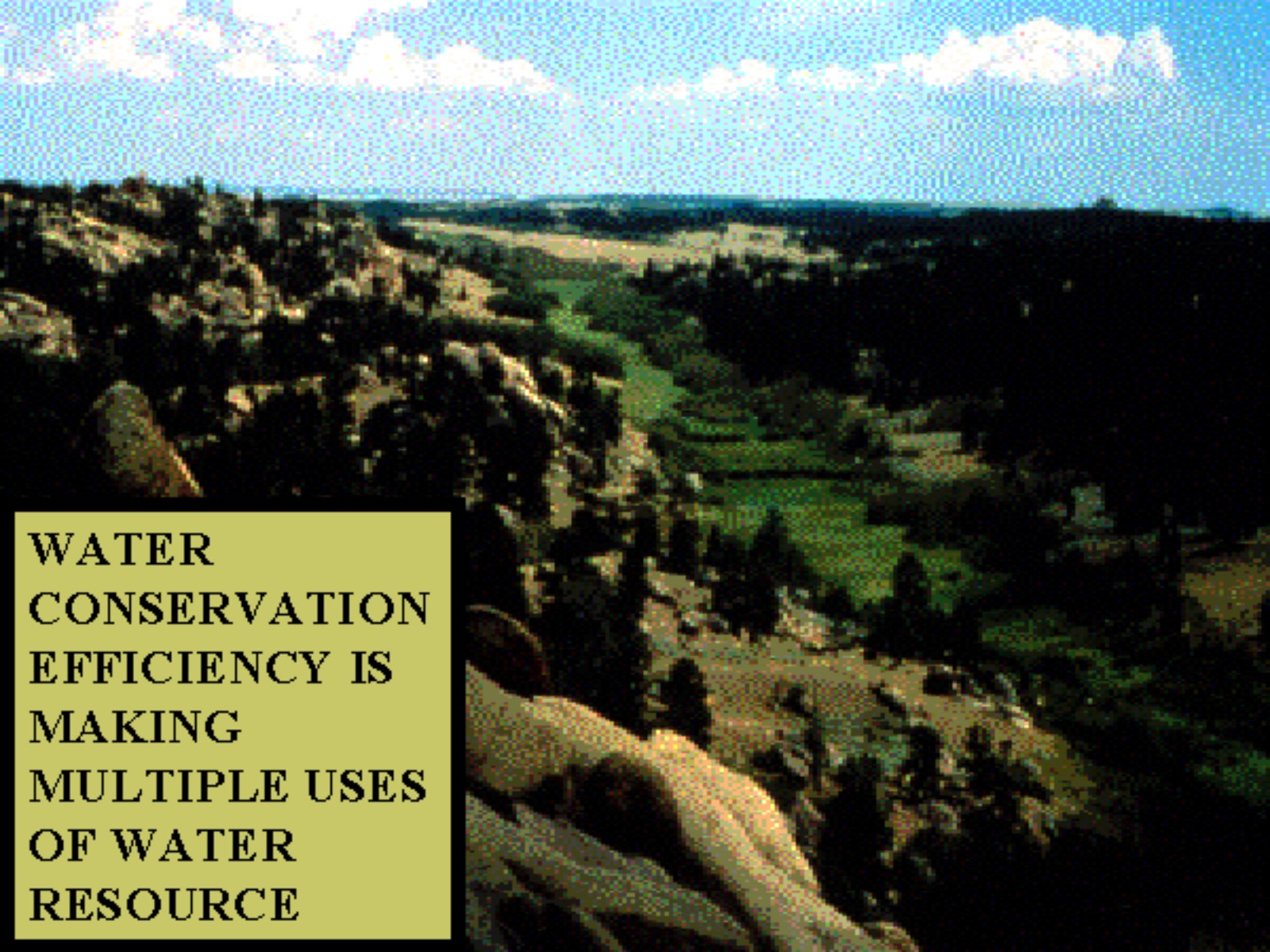
An aerial photograph of a rural landscape. A stream flows through the center of the image. In the foreground, there is a large, dark green field. In the middle ground, a white barn with a blue roof is visible, surrounded by other smaller buildings and a dirt road. The background shows rolling hills and a clear sky.

INDICATORS

- NO HEADCUTS
- FEW OR NO BEDSCARPS
- LITTLE SEDIMENT
- CONCAVE PROFILE

BURCHARD HEEDE

STREAM DYNAMICS:
AN OVERVIEW FOR
LAND MANAGERS



**WATER
CONSERVATION
EFFICIENCY IS
MAKING
MULTIPLE USES
OF WATER
RESOURCE**

POINTS TO CONSIDER

- **IRRIGATION, LIVESTOCK WATER, MUNICIPAL AND INDUSTRIAL DEMANDS CONTINUE TO BE PRIMARY USES**
- **CONSERVATION ACCEPTANCE HAS BEEN AND CONTINUES TO BE INCENTIVE DRIVEN**
- **COMMUNITY CHANGE BRINGS AN EMERGING PUBLIC INTEREST IN WATER USE**

**THE CHALLENGE
IS TO BALANCE
CONSUMPTIVE
AND NON-CONSUMPTIVE
USE
OPPORTUNITIES**

REACHING A BALANCE WILL REQUIRE:

- RECOGNIZING TRADITIONAL USE VALUES**
- RECOGNIZING FUTURE USE INTERESTS**
- UNDERSTANDING SOLUTIONS ARE COMPLEX DUE TO MANAGEMENT/ CHANGE/IMPACTS/RAMIFICATIONS**
- DEVELOPING INCENTIVES**

**WATER MANAGEMENT AND
CONSERVATION
ASSISTANCE PROGRAMS
DIRECTORY**

WATER LAW REVIEW

- **MONTANA LEASING**
- **OREGON WATER TRUST**
- **TEXAS WATER BANK**
- **COLORADO BANKING**
- **WYOMING CHANGE OF USE**

PROPOSALS

- SALVAGE**

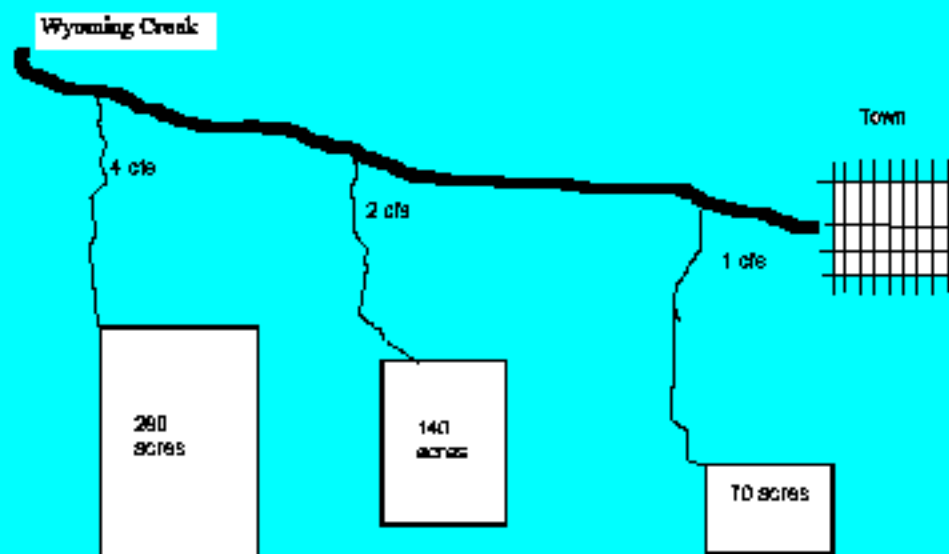
- TEMPORARY CHANGE OF USE**

- DRY YEAR LEASING**

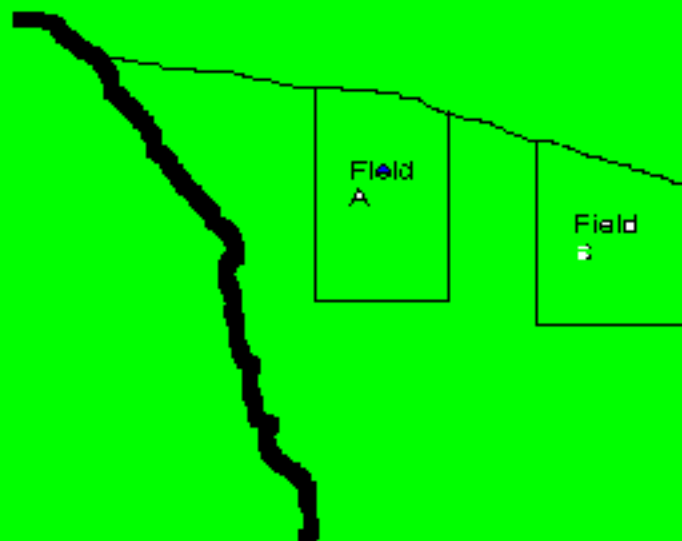
Water Savings Through Conveyance Efficiency Improvements Example

(Salvage Water)

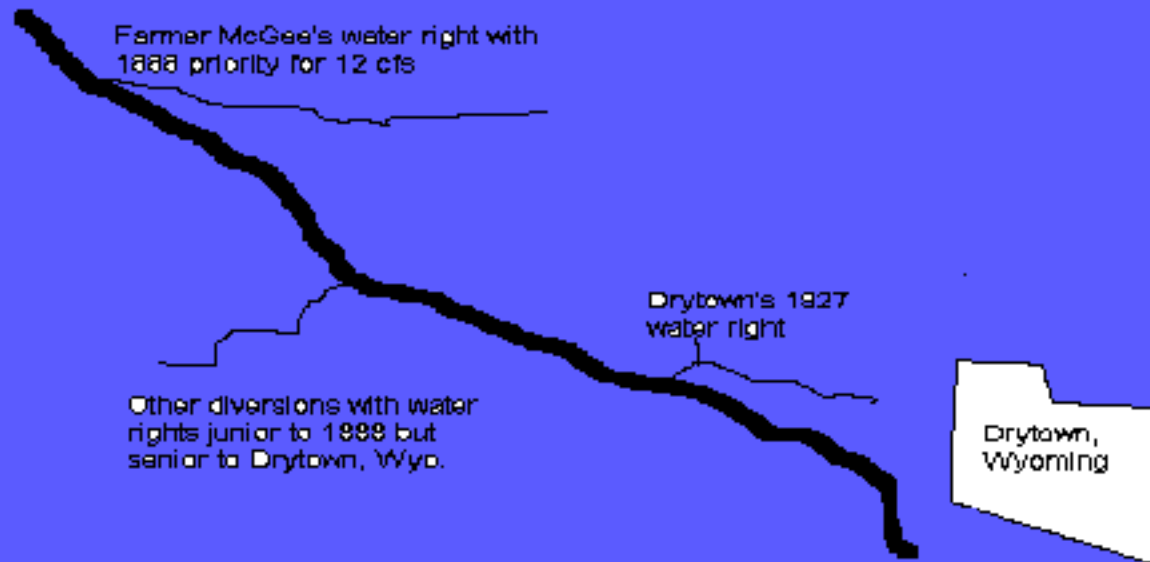
Existing Situation



Seasonal or Temporary Changes in Use—Same Owner Retains the Water Right



Dry Year Leasing Example



Privately held instream flow example

