

Farm Level Strategies

How did I get into this predicament?

How do I get myself out?

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A Common Myth?

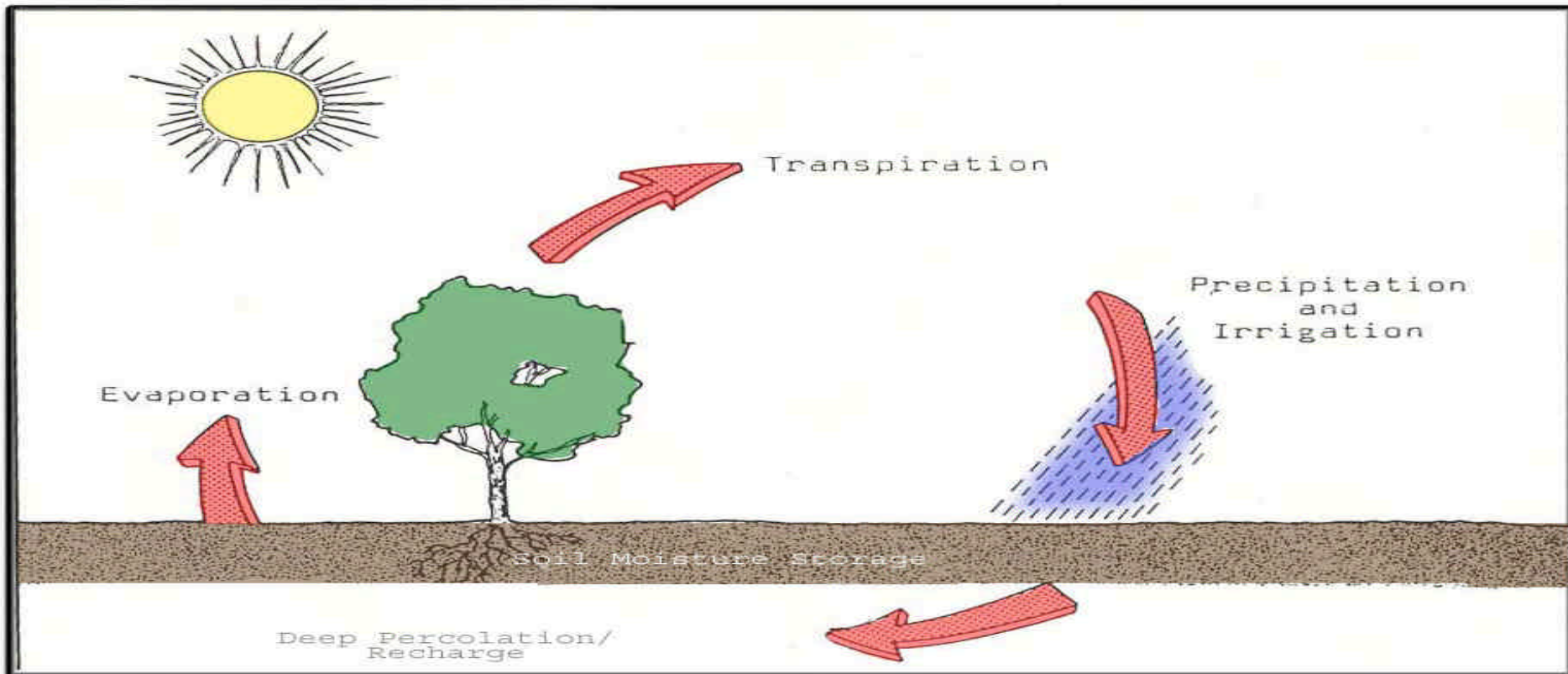
Sprinklers Save Water!!!

- Sprinklers make us more efficient—YES
- Sprinklers allow us to expand acreage with same supply—YES
- Sprinklers decrease Consumptive Use—NO

Consumptive Use(CU)

A basic concept in understanding our predicament!!!

- Consumptive use = Transpiration + Evaporation + Water in plants



Consumptive use for Crops— Full Water Supply

Alfalfa	28-32 inches	2.5 ac-ft/ac
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Small Grains	17-23 inches	1.7 ac-ft/ac
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Potatoes	15-20 inches	1.4 ac-ft/ac
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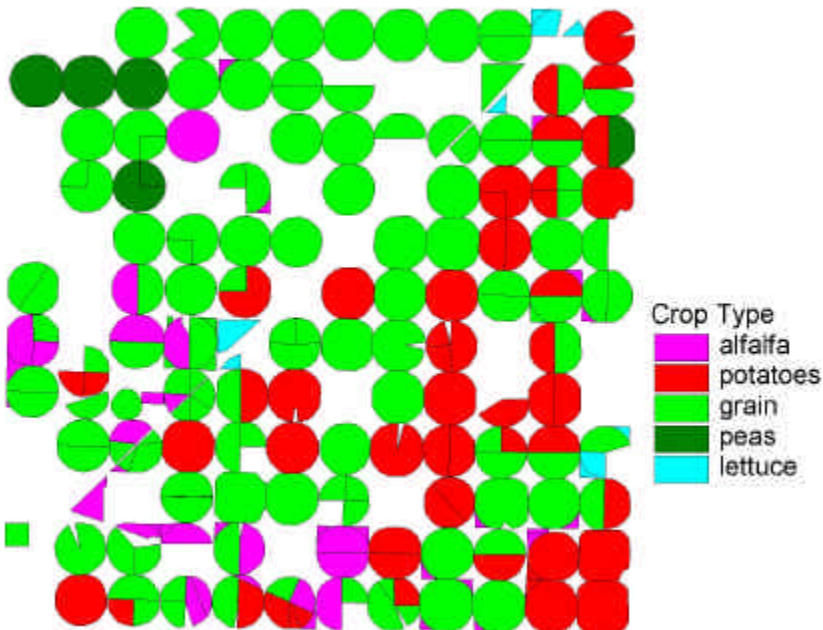
What has happened to CU in 50 Years

- Full Season Supply
 - Including pre-season
 - Post-season
- Greater yields
 - Double in grain
 - Double in Alfalfa
 - 50% higher in potatoes
- Crops are healthier
- Sprinkler irrigation increases CU
 - More wet soil evap
 - Wind evap and drift
 - Higher transpiration with lower deficits
 - Acreage increase per well increases CU

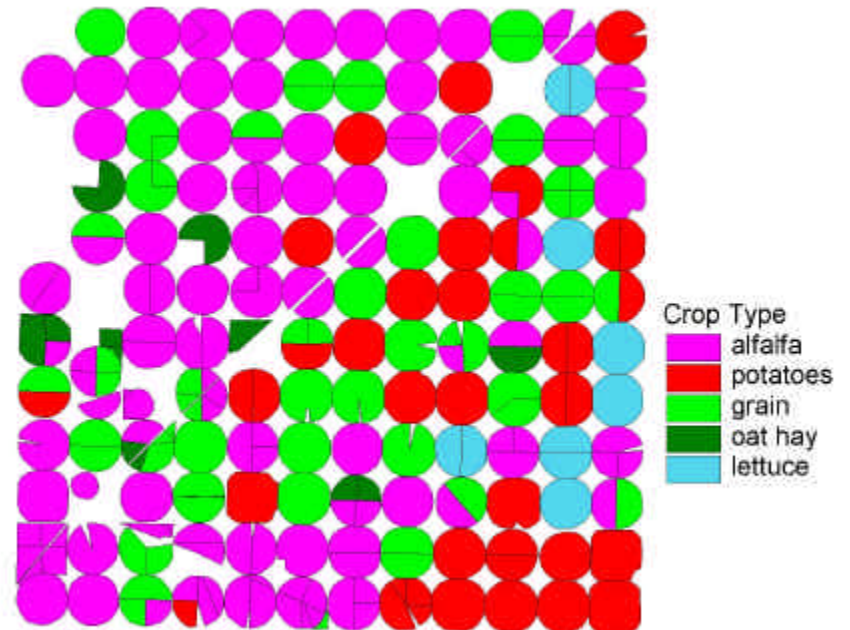
What has happened to CU in 50 Years -continued-

- Change in Cropping patterns
 - More Alfalfa under sprinklers with season long supply
 - More Wheat

1984



2001

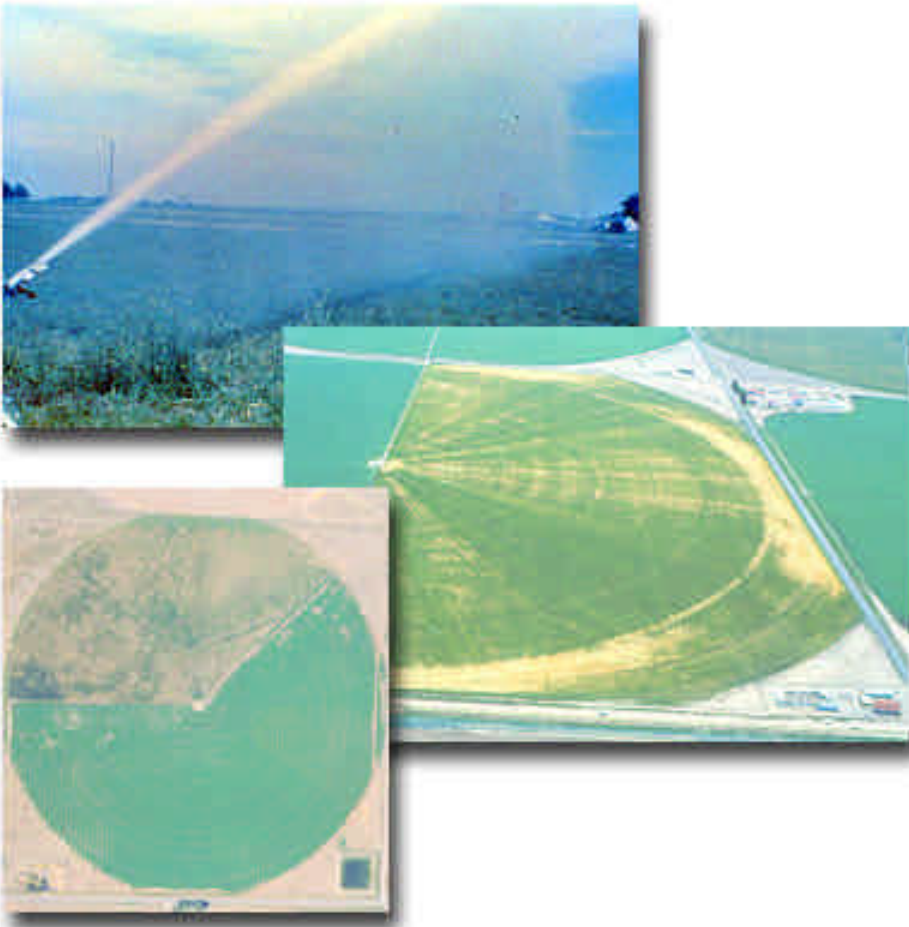


Farm Water Conservation Strategies

What can I do?

Decrease Acreage

- Corner systems
- End guns
- Partial circles: save 1 to 2 acre-feet per acre or more in consumptive use



Farm Water Conservation Strategies

-continued-

- Change Management

Plant deeper and
irrigate less often

- Save 1-2 inches of
water



Farm Water Conservation Strategies

-continued-

- Change management
 - Cut Water off earlier
 - Grain: 3-4 weeks prior to harvest
 - Potatoes: when optimum size is reached
 - Alfalfa: One Fall irrigation before deep freeze—New varieties are problem

Farm Water Conservation Strategies

-continued-

- Deficit Irrigation: Stress crop according to growth stage

WATER SUPPLY AND CROP YIELD

Growth periods of winter and spring wheat are shown in Figure 51.

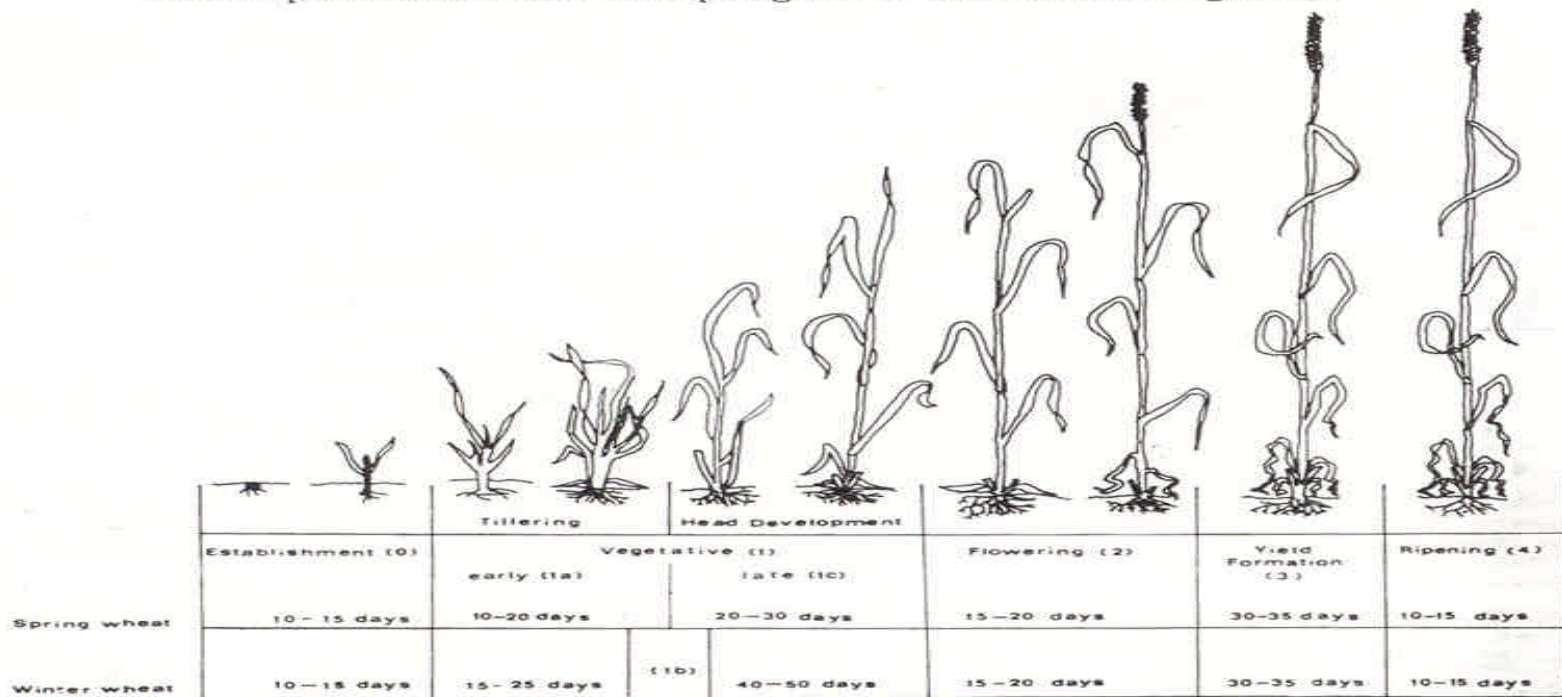


Fig. 51

Growth periods of winter and spring wheat (Large, 1954)

Farm Water Conservation Strategies

-continued-

- Post-season irrigation
 - Make do with one or no irrigations

Farm Water Conservation Strategies

-continued-

- Change crops and varieties—
 - Consider barley vs. wheat—16 vs. 22 inches of water
 - Higher dormancy alfalfas
 - Shorter season potatoes

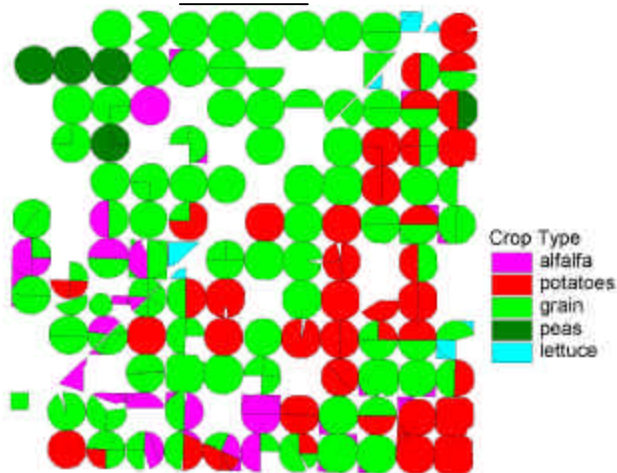
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Farm Water Conservation Strategies

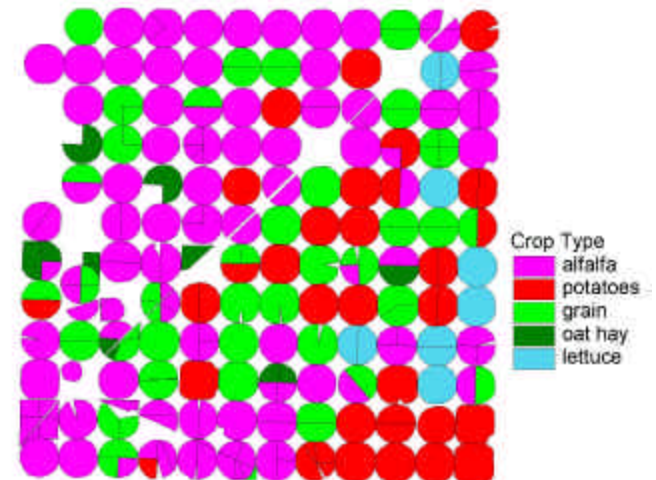
-continued-

- Change in rotations
 - Half circles
 - Potatoes and conservation crop
 - e.g. 6 circles = 3 potato + 1.5 grain + 1.5 conservation
 - Alfalfa with grain and conservation crop
 - e.g. 6 circles = 4 alfalfa + 1 grain +1 conservation

1984



2001



Farm Water Conservation Strategies

-continued-

- Schedule water applications
 - Keep track of ET
 - Keep track of moisture in profile
- Modify systems for optimum efficiency

Farm Water Conservation Strategies

- Think Strategically—
 - keep economics and risk in mind
- Think long term—
 - Land without water is worthless
- Think in terms of community: We are in it together
 - We should all be willing to give up something
 - Let's put ourselves in our neighbors shoes

We have worked well together
against a common enemy in the past

AWDI, Amendments 15 and 16



We have a common enemy now

Shortage of water

We can overcome this enemy in a
way that will preserve our economy
and our friendships

A Closing Thought

How much water would the costs of a
\$10,000,000 to \$20,000,000 legal
battle buy!!!