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## Agricultural Water Use Efficiency

Gordon McCurry

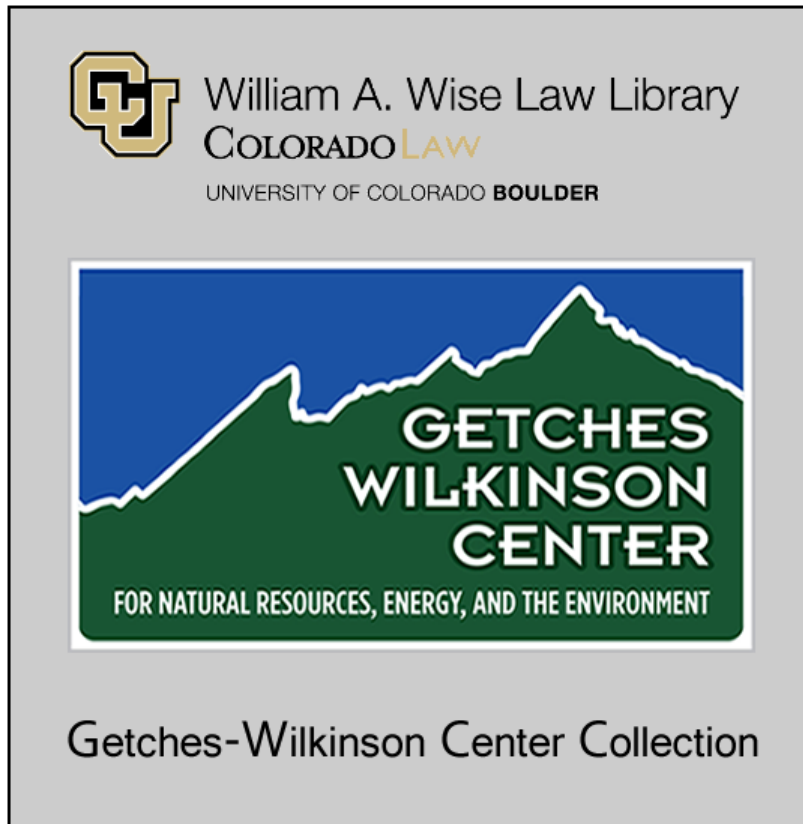
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# **Agricultural Water Use Efficiency**

Dr. Gordon McCurry  
Camp Dresser & McKee

**TWO DECADES OF WATER LAW AND POLICY REFORM:  
A RETROSPECTIVE AND AGENDA FOR THE FUTURE**

June 13-15, 2001

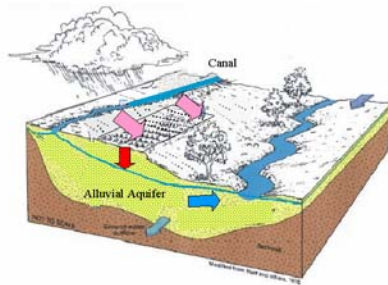
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Boulder, Colorado

## Outline of Comments

- Hydrology of an Irrigated Watershed
- Irrigation Efficiency and Return Flow
- Effects of Increasing Irrigation Efficiency

## Hydrology in an Irrigated Watershed

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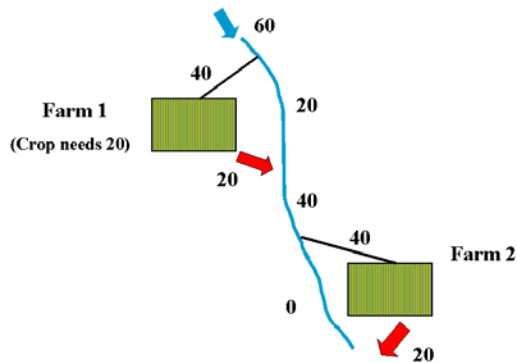


## Irrigation Efficiency and Return Flow

- Irrigation Efficiencies
- Typical Efficiencies:
  - o Furrow: 40 – 60%
  - o Sprinkler: 70 – 80%
  - o Drip: 85 – 95%
- Excess that percolates to water table and migrates in aquifer back to river

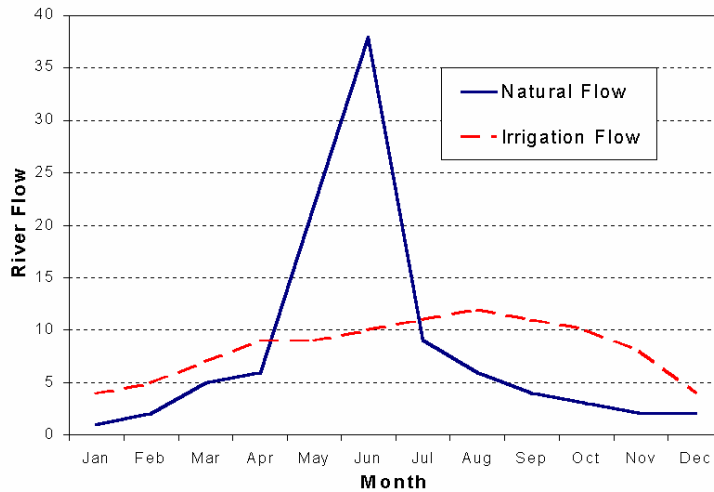
## Diversions & Streamflow: (50) Efficiency)

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## Stream Flow Hydrographs

### Stream Flow Hydrographs



## Effects of Increasing Irrigation Efficiency

- Lower percolation, recharge & return flow
- Less water in river in late season
- Fewer junior water rights receive water
  - More late-season calls on river by seniors
- Need for additional reservoirs, recharge projects
  - Cost, riparian impacts