

PREZENTATION WATER SOURCES FOR IRRIGATION

Prepared by: _____

Group: _____

Checked by: _____

Water Sources for Irrigation

- Quantity needs
- Quality factors
- Surface water sources
- Groundwater sources



Quantity needed

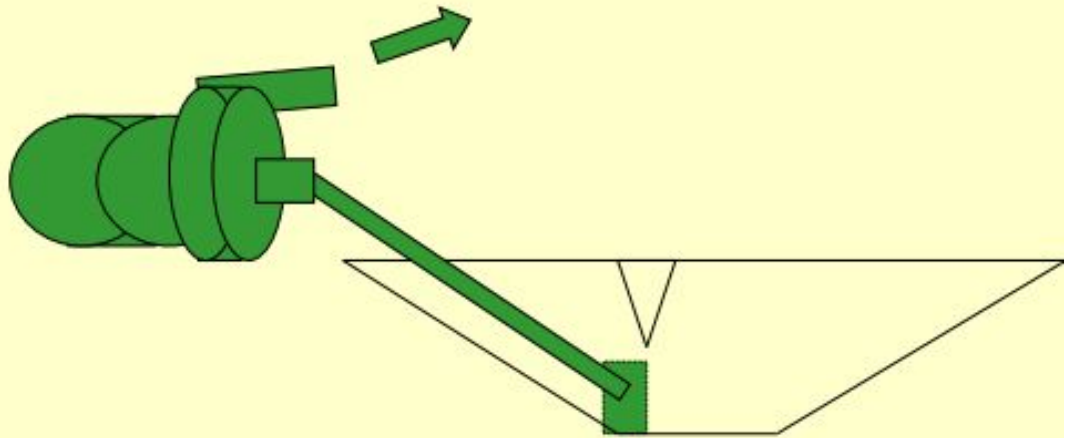
- Irrigation water replaces the plant water use
- Water use is directly correlated to light interception
- 50% light interception results in 50% of the maximum water use
- Maximum water use mid-July early August, full light interception, highest temperatures and brightest days.

Quality Factors

- Foreign material – clogs pumps, screen and nozzle sand, algae, aquatic plants and fish/frogs
- Salt – salinity
- Calcium – and other elements that deposit in pipes
- Disease agents – waste treatment plants-warm water
- Aquatic weed treatment-lake algae milfoil treatment

Surface Water Sources

- Lakes
- Rivers
- Streams
- Drainage ditches
- Private ponds



Surface water quality issues:

- Consider outlets from municipal treatment plants and other contamination sources
- Consider plant disease potential, warm or contaminated water
- Economics ---location is often not centered to water use

Surface Water Sources

- Lakes
 - Rivers
 - Streams
 - Public drain meeting the definition of a stream
- “Public -Waters of the State”
1. Use is limited to the amount that does not negatively effect other riparian users.
 2. Old English common law
 3. Limited to land units that are riparian, adjacent to water.
 4. Legally cannot interfere with others travel on the water.

Surface Water Sources

- Private ponds “ non-contiguous waters”
- Ditches

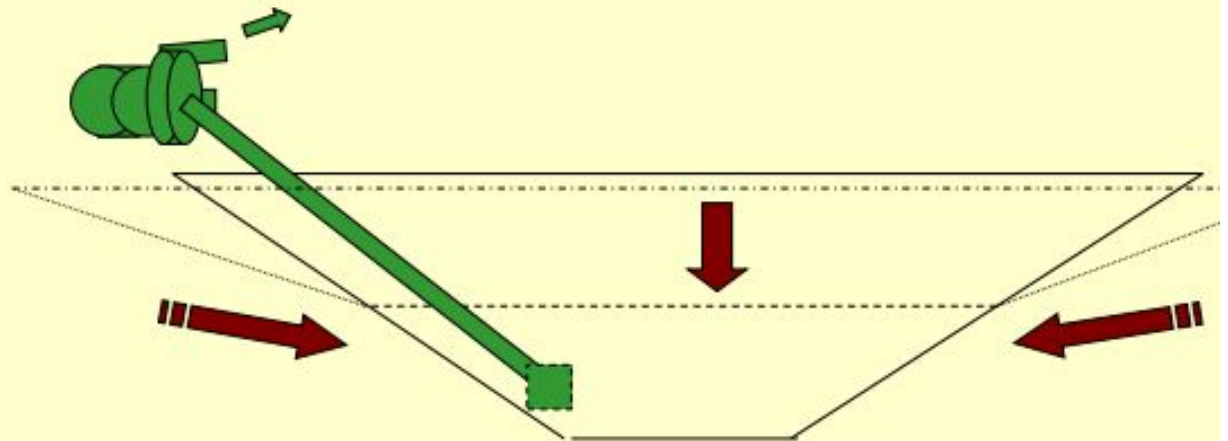
Not considered “Public - Waters of the State”

1. In most areas, use is limited only by your ability to pull the water
2. Common to have local conflict, legal gray area.
3. Structure and impediments to flow are regulated by drain commissioner on public drains (sediment).

Surface Water Sources

Ponds

- Recharge capacity far more important than volume
- Volume indicates storage capacity allowing pumping rate higher than recharge
- Many natural ponds will have slow recharge



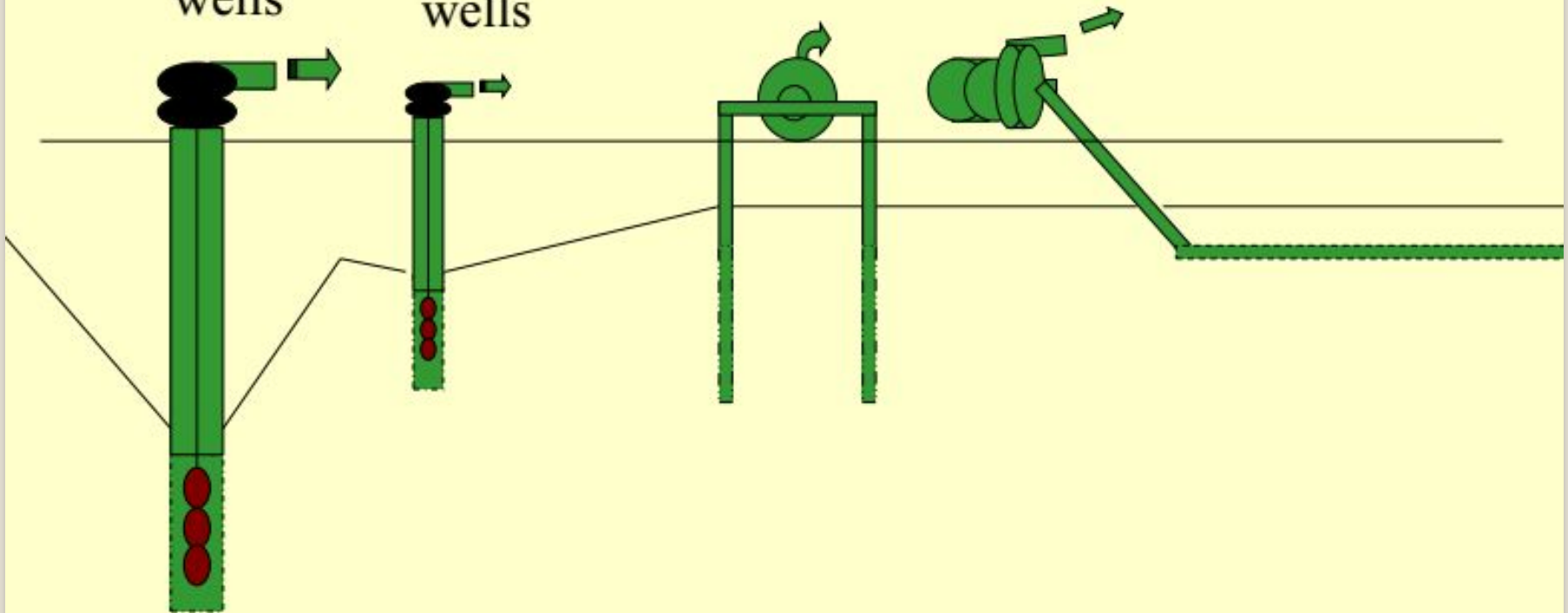
Groundwater Sources

Deep wells

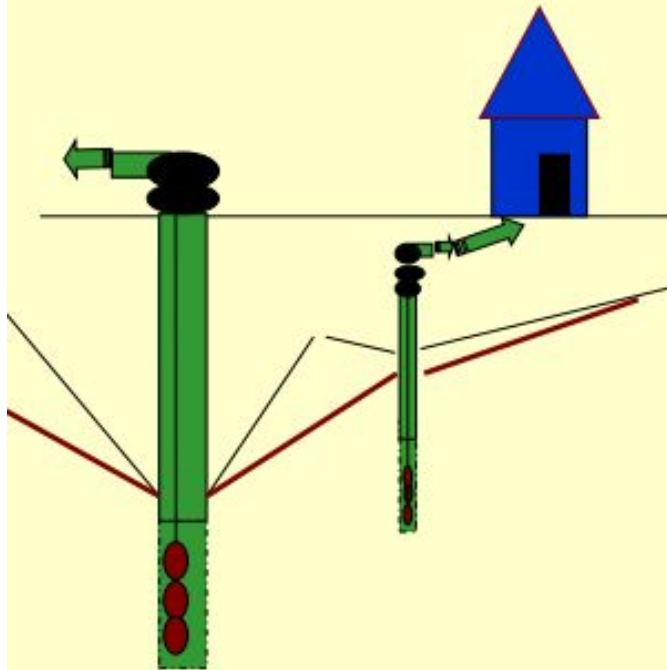
Shallow wells

Shallow suction wells

Horizontal suction wells



Conflict and Competition for Water



- Each well creates a cone of depression
- The irrigation well's cone of depression may interfere with other wells
- Investigate neighboring wells:
 - depths - deeper less potential problem
 - distance - further away the better
 - groundwater flow, up hill is better