The DOBSON Association

Know Your Lakes Forum

Saratoga Recreation Center

Sponsored by the Dobson Association Water Management Committee

Dobson Ranch
Mesa, Arizona

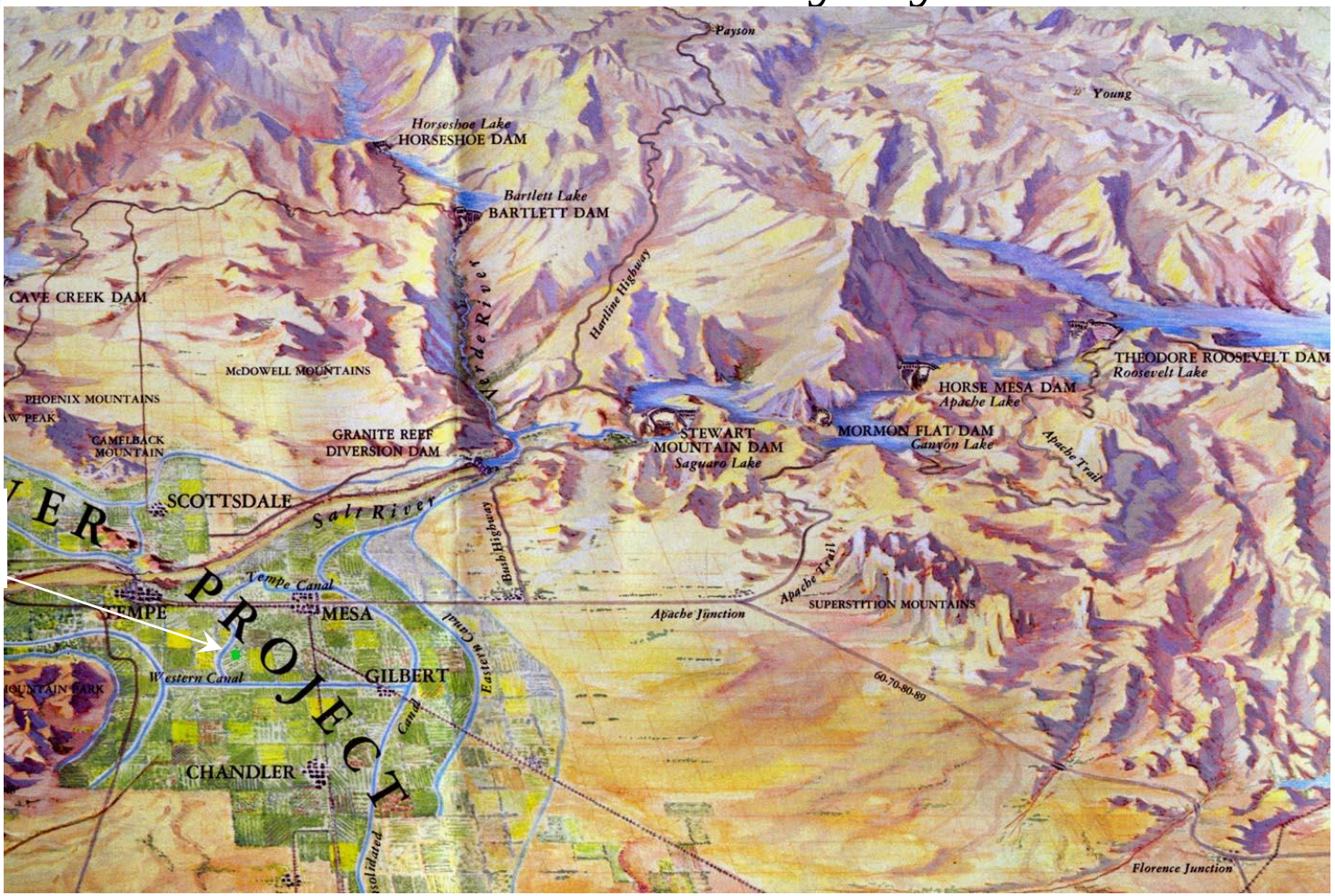
Share Your Concerns With Other Ranch Residents
Help Chart The Future of Our Lakes

Dobson Ranch Lakes

Signature Feature of Dobson Ranch

- 10 lakes with a surface area of 86.54 acres
  - Volume of water estimates ranges from 350 to 400 acre-feet
  - Consume approximately 1900 acre-feet/year
    - 75% of replacement water purchased from SRP
    - 25% From rain and street run-off
- Approximately 290 homes border lakes
- Laid out in the 1970's
  - Provide for surface drainage
  - To provide recreation opportunities
  - Enhance value of residential community

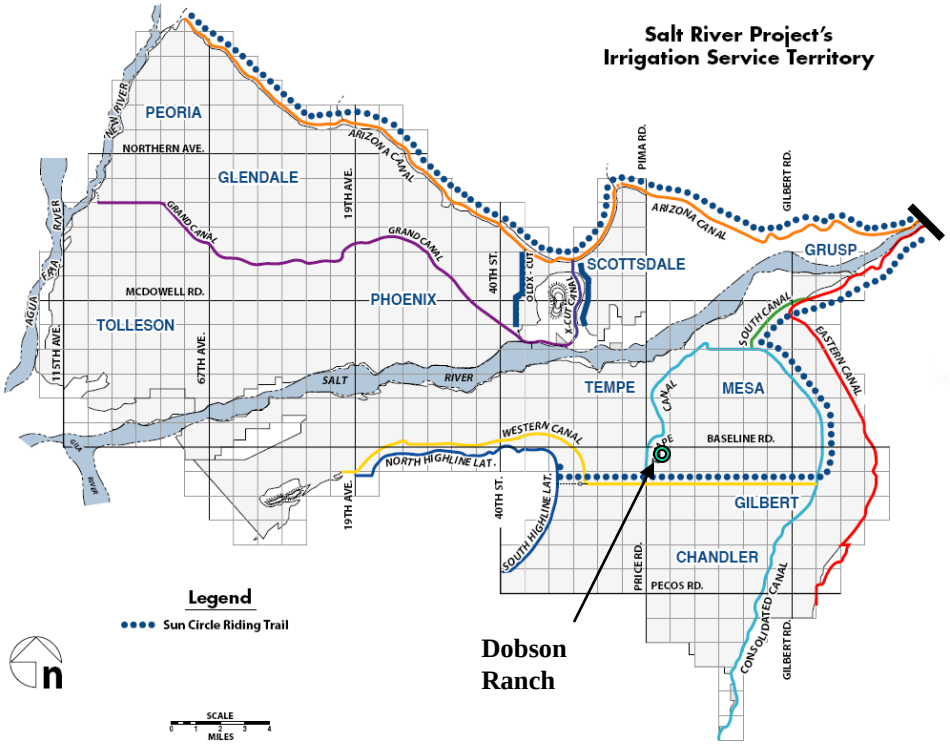
SRP Delivery System



Dobson Ranch

The DOBSON Association

Class A Member of Salt River Project



- Bartlett Dam and Reservoir
- C.C. Cragin Dam and Reservoir
- Granite Reef Diversion Dam
- Horse Mesa Dam and Apache Lake
- Horseshoe Dam and Reservoir
- Mormon Flat Dam and Canyon Lake
- Roosevelt Dam and Lake
- Stewart Mountain Dam and Saguaro Lake

Reservoir data Back to

	Elevation Current/Remaining (feet)		% Full	Storage (in acre feet) Current	Available	24 hr. Change	Evaporation (acre feet)	Rain (inches)
Roosevelt	2,116.21	34.79	61	1,004,737	648,306	1,419	96	0.00
Horse Mesa	1,903.90	10.10	89	219,093	26,045	-75	15	0.00
Mormon Flat	1,657.13	3.37	95	54,683	3,169	-457	6	0.00
Stewart Mtn	1,527.22	1.78	97	67,533	2,232	1,166	7	0.00
Total Salt system			**66**	**1,346,046**	**679,752**	**2053**	**124**	
Horseshoe	1,953.11	72.89	0	276	108,941	-24	1	0.00
Bartlett	1,746.51	51.49	39	69,376	108,810	-356	8	0.00
Total Verde system			**24**	**69,652**	**217,751**	**-380**	**9**	
Total reservoir system			**61**	**1,415,698**	**897,503**	**1,673**	**133**	
Total system year ago			**77**					

Runoff in cubic feet per second (cfs) Back to top

	Yesterday mean daily	%	Normal	Today
Salt River at Roosevelt	1096	164	668	1110
Tonto Creek at Roosevelt	143	143	100	114
Verde River at Tangle	273	63	434	261
Total inflow	**1512**	**126**	**1202**	**1485**
Salt River Canyon				600
Verde River at Camp Verde				133

https://www.srpnet.com/

Know Your Lakes

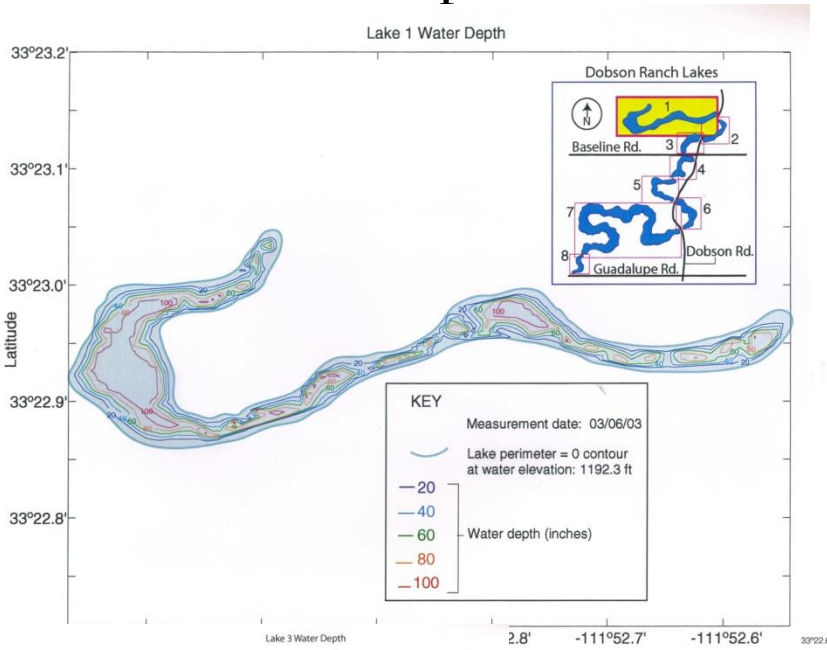
Granite Reef Dam

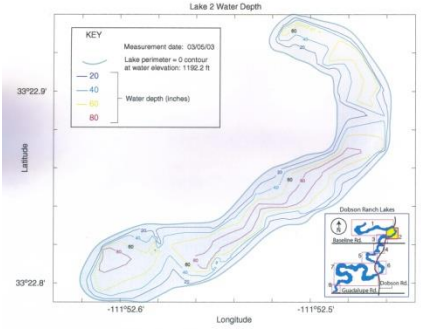
Tempe Canal

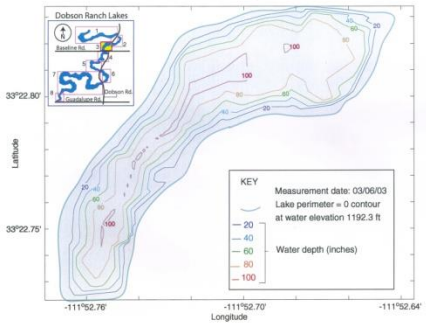
SRP Water to Dobson Ranch

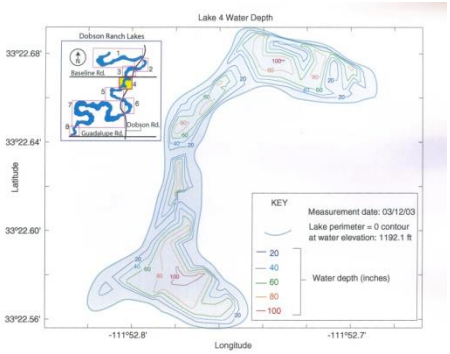
Dobson Ranch Lakes Layout

Depth Of Water in Lakes 1 - 4

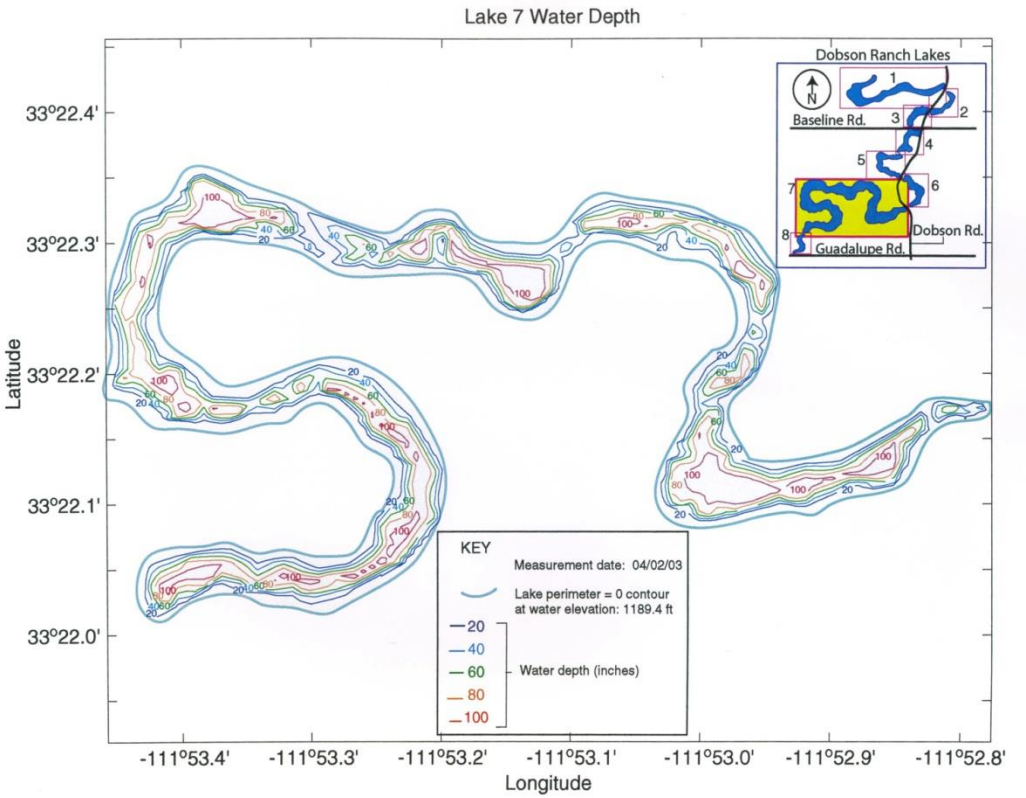


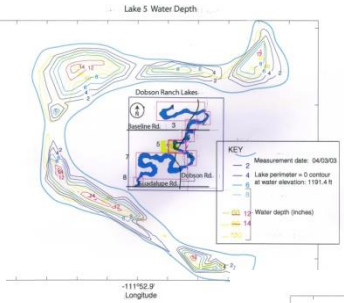


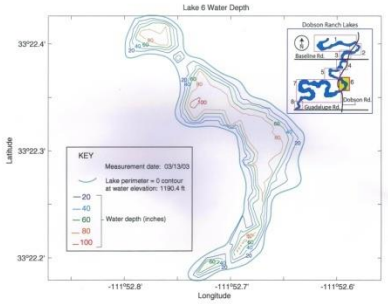


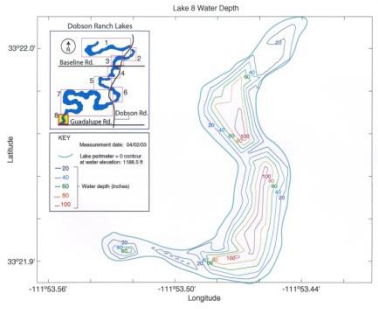


Depth Of Water in Lakes 5 - 8





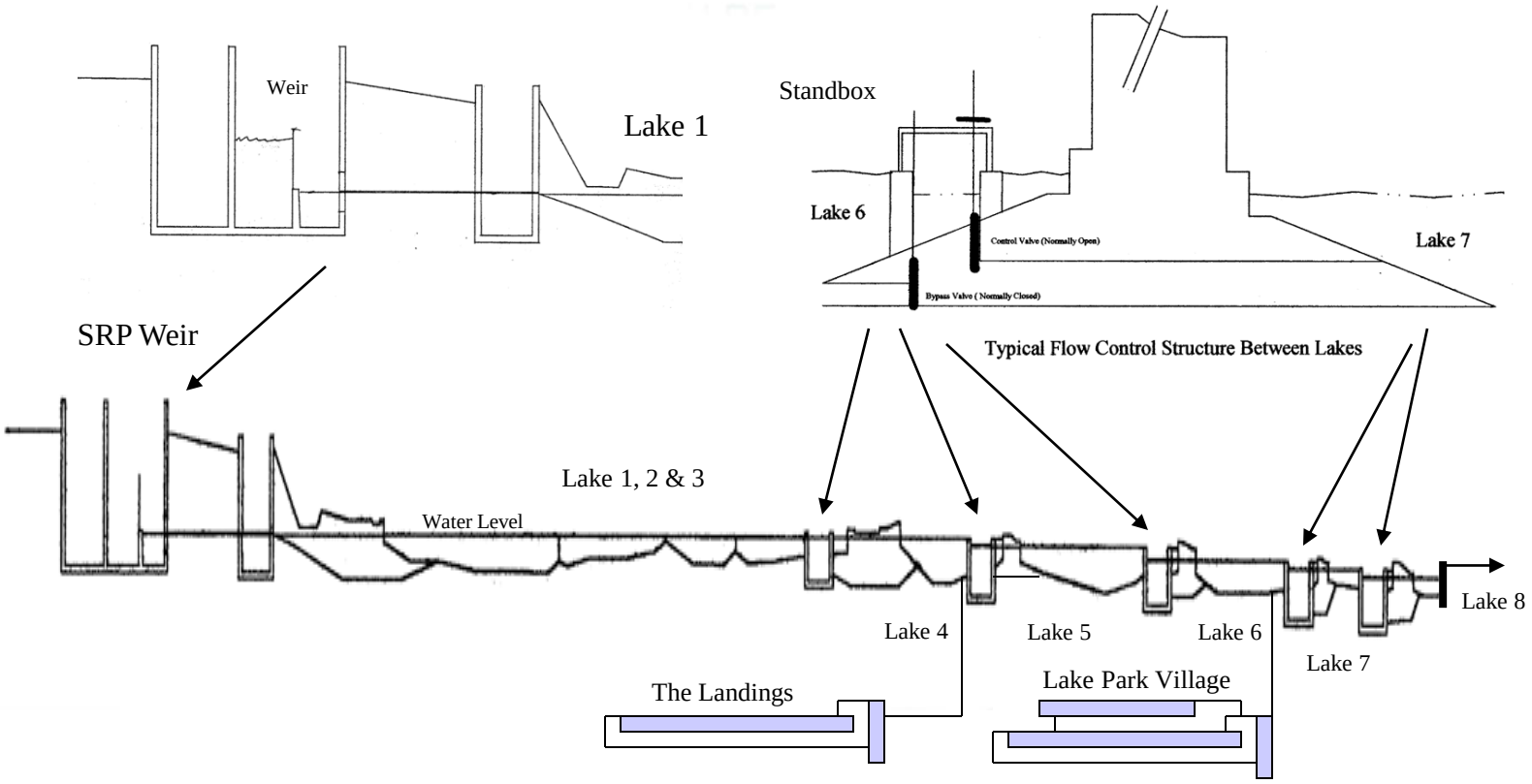




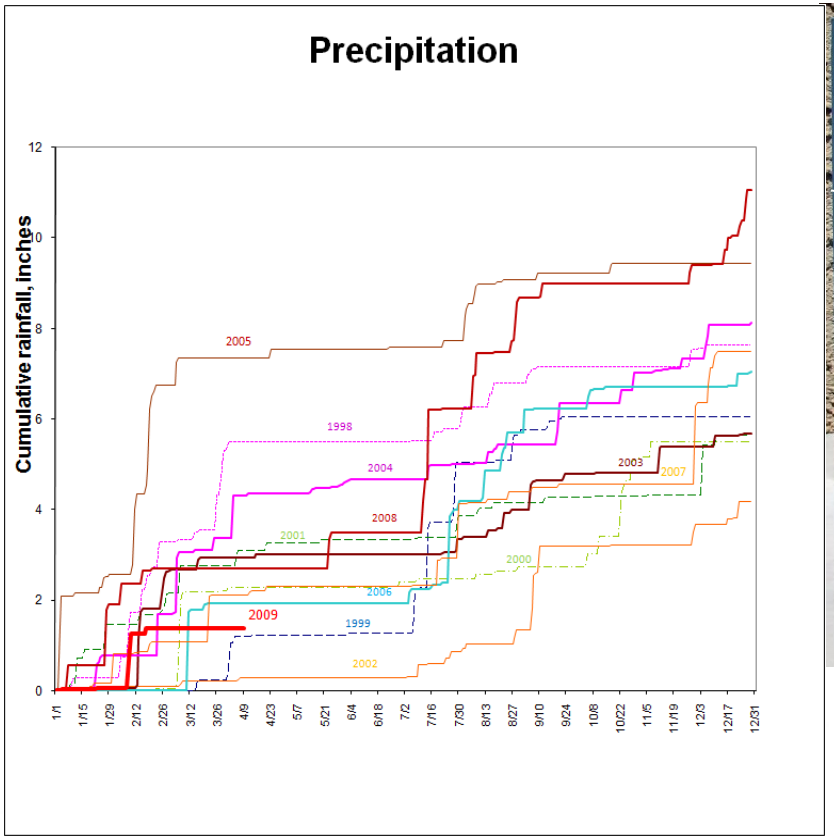
Dobson Ranch Lake Details

Lake	Elevation ft	**Area acres**	Volume acre-feet	*Preimeter ft*
1	1,192.02	**16.10**	97	*8,875*
2	1,192.02	**6.00**	28	*2,750*
3	1,192.02	**3.30**	21	*1,800*
4	1,191.45	**3.50**	18	*2,550*
Landings		**1.64**	3	
5	1,191.07	**4.30**	18	*3,900*
6	1,190.14	**8.00**	39	*3,450*
LPV		**2.10**	4	
7	1,189.47	**38.90**	220	*17,450*
8	1,189.31	**2.70**	12	*2,050*
Range, ft	2.71	**86.54**	460	*42,825*

Dobson Ranch Lake Cross Sections

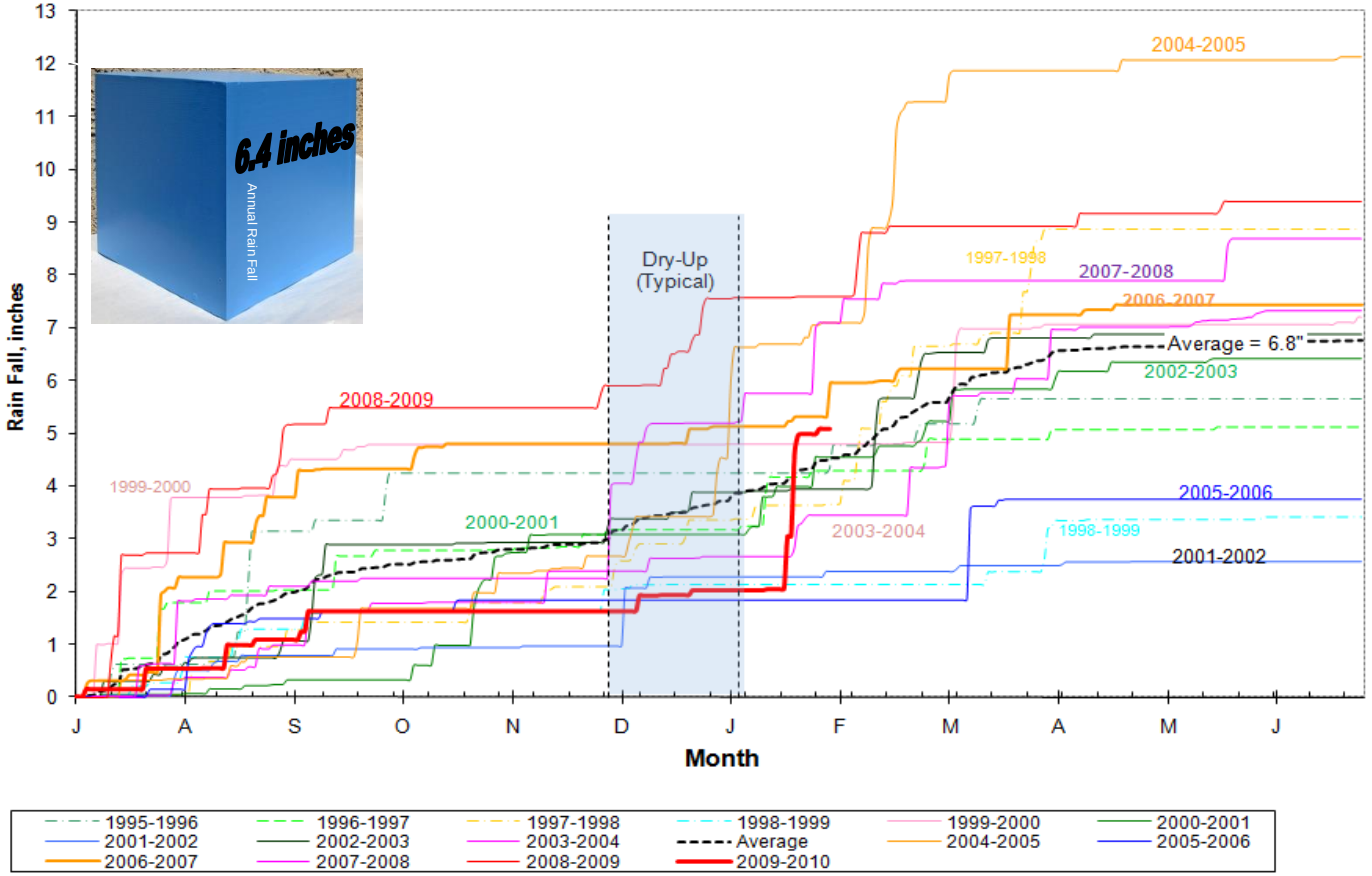


Historical Records - Rain

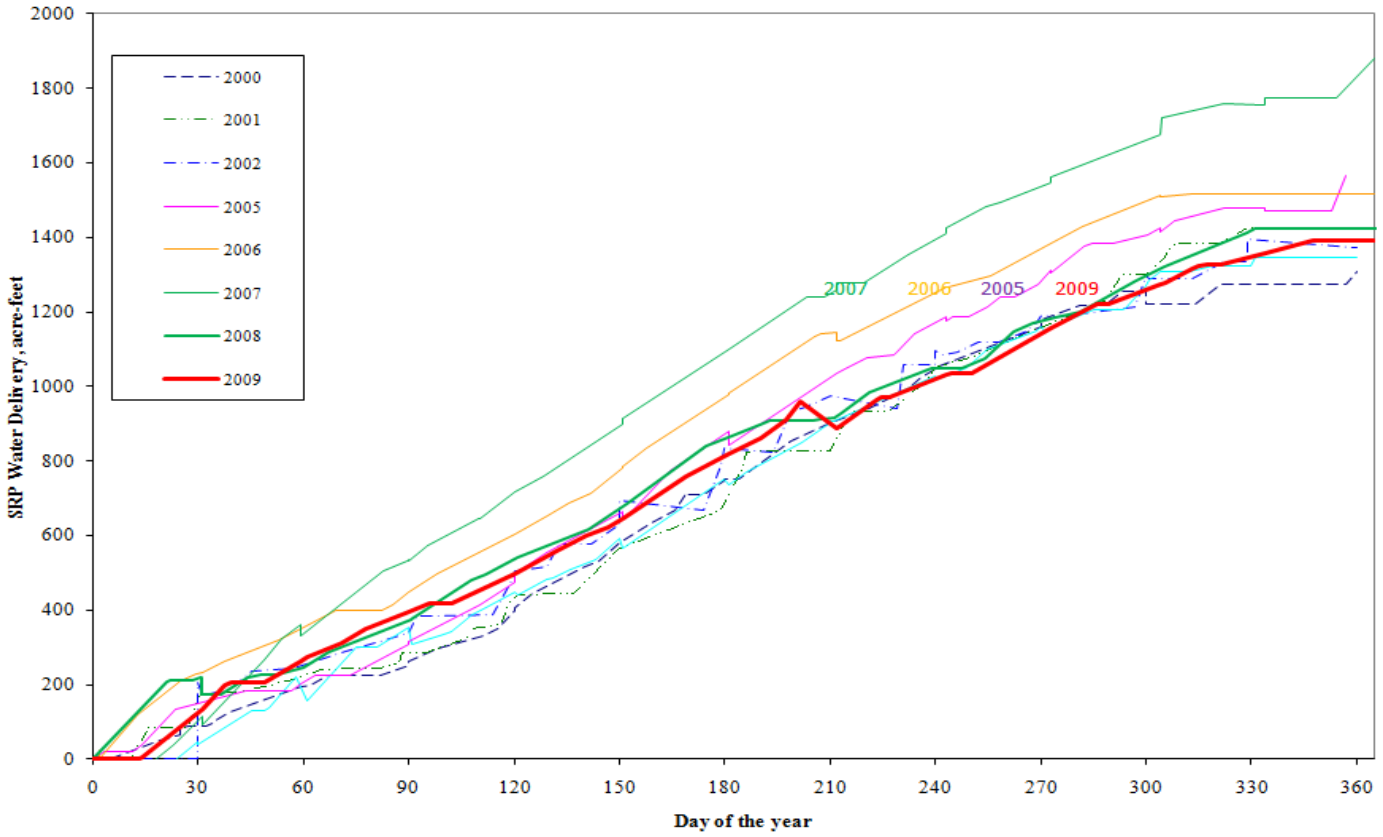


For each square foot, only 6.4” falls each year on average

Precipitation by physical year at Dobson Ranch



Water Delivery from SRP by Year



AZMET Weather Station at MCC

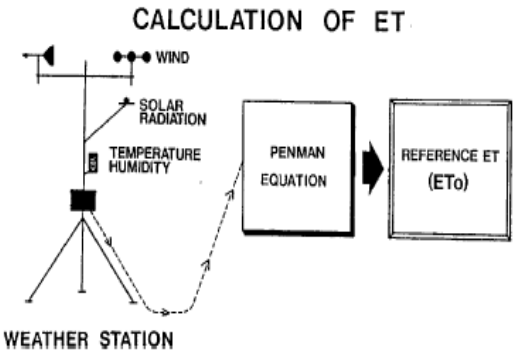
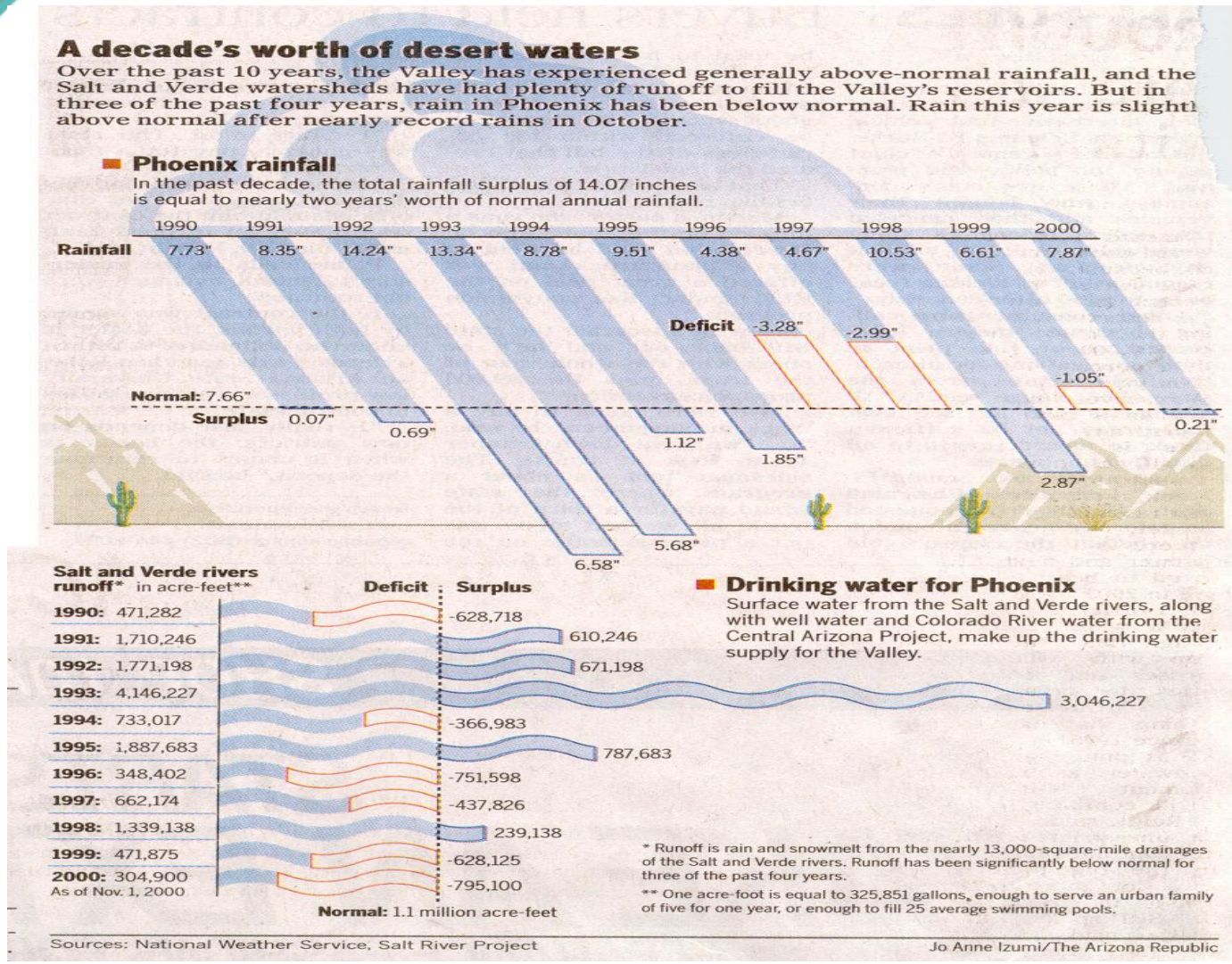


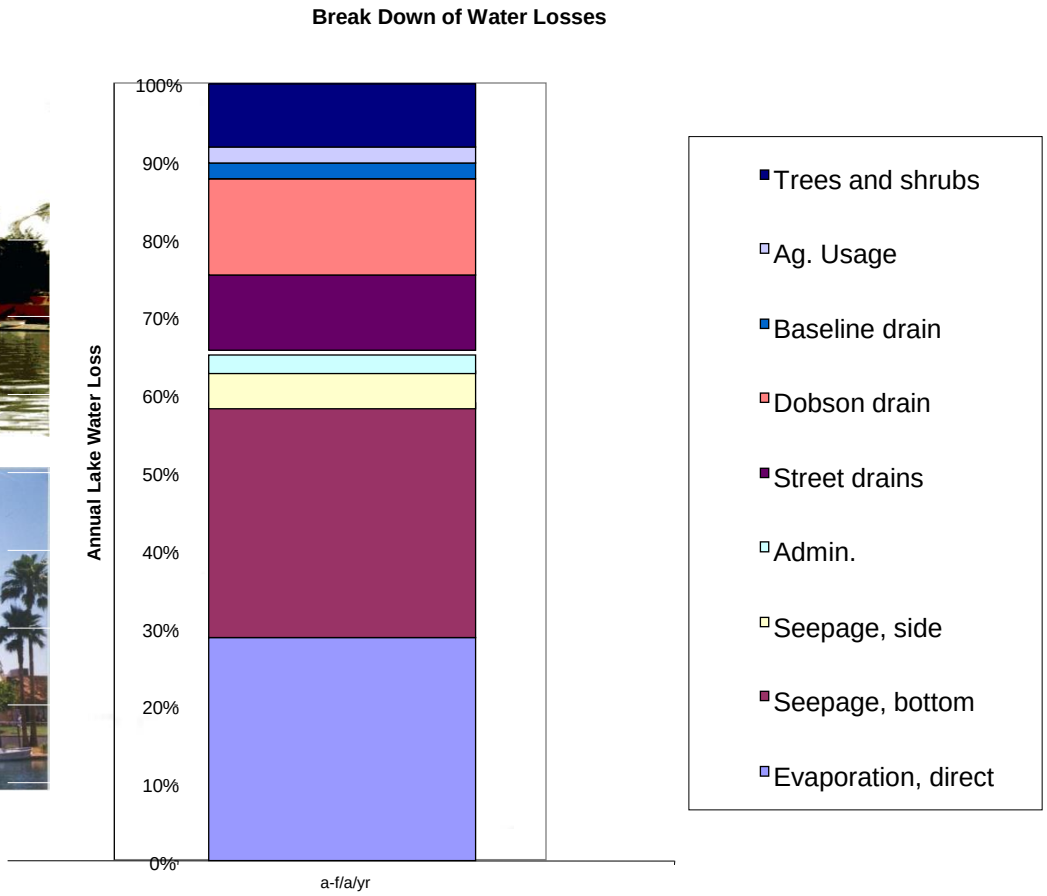
Figure 3. Schematic depicting how ET_o is determined. Wind, solar radiation, temperature and humidity data from a weather station are used as inputs to the Penman Equation which, in turn, provides the ET_o value.

www.azmet.edu

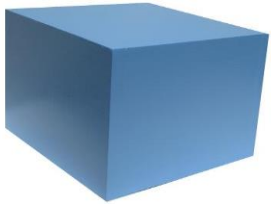
EToh = W*Rn + (1-W)*VPD*FU2


A decade's worth of desert waters
Over the past 10 years, the Valley has experienced generally above-normal rainfall, and the Salt and Verde watersheds have had plenty of runoff to fill the Valley's reservoirs. But in three of the past four years, rain in Phoenix has been below normal. Rain this year is slightl above normal after nearly record rains in October.
Phoenix rainfall
In the past decade, the total rainfall surplus of 14.07 inches is equal to nearly two years' worth of normal annual rainfall.
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000
Rainfall 7.73" 8.35" 14.24" 13.34" 8.78" 9.51" 4.38" 4.67" 10.53" 6.61" 7.87"
Deficit -3.28" -2.99" -1.05"
Normal: 7.66"
Surplus 0.07" 0.69" 1.12" 1.85" 2.87" 0.21"
6.58" 5.68"
Salt and Verde rivers runoff* in acre-feet**
Deficit Surplus
1990: 471,282 -628,718
1991: 1,710,246 610,246
1992: 1,771,198 671,198
1993: 4,146,227 3,046,227
1994: 733,017 -366,983
1995: 1,887,683 787,683
1996: 348,402 -751,598
1997: 662,174 -437,826
1998: 1,339,138 239,138
1999: 471,875 -628,125
2000: 304,900 -795,100
As of Nov. 1, 2000
Normal: 1.1 million acre-feet
Drinking water for Phoenix
Surface water from the Salt and Verde rivers, along with well water and Colorado River water from the Central Arizona Project, make up the drinking water supply for the Valley.
* Runoff is rain and snowmelt from the nearly 13,000-square-mile drainages of the Salt and Verde rivers. Runoff has been significantly below normal for three of the past four years.
** One acre-foot is equal to 325,851 gallons, enough to serve an urban family of five for one year, or enough to fill 25 average swimming pools.
Sources: National Weather Service, Salt River Project
Jo Anne Izumi/The Arizona Republic

Where The Water Goes

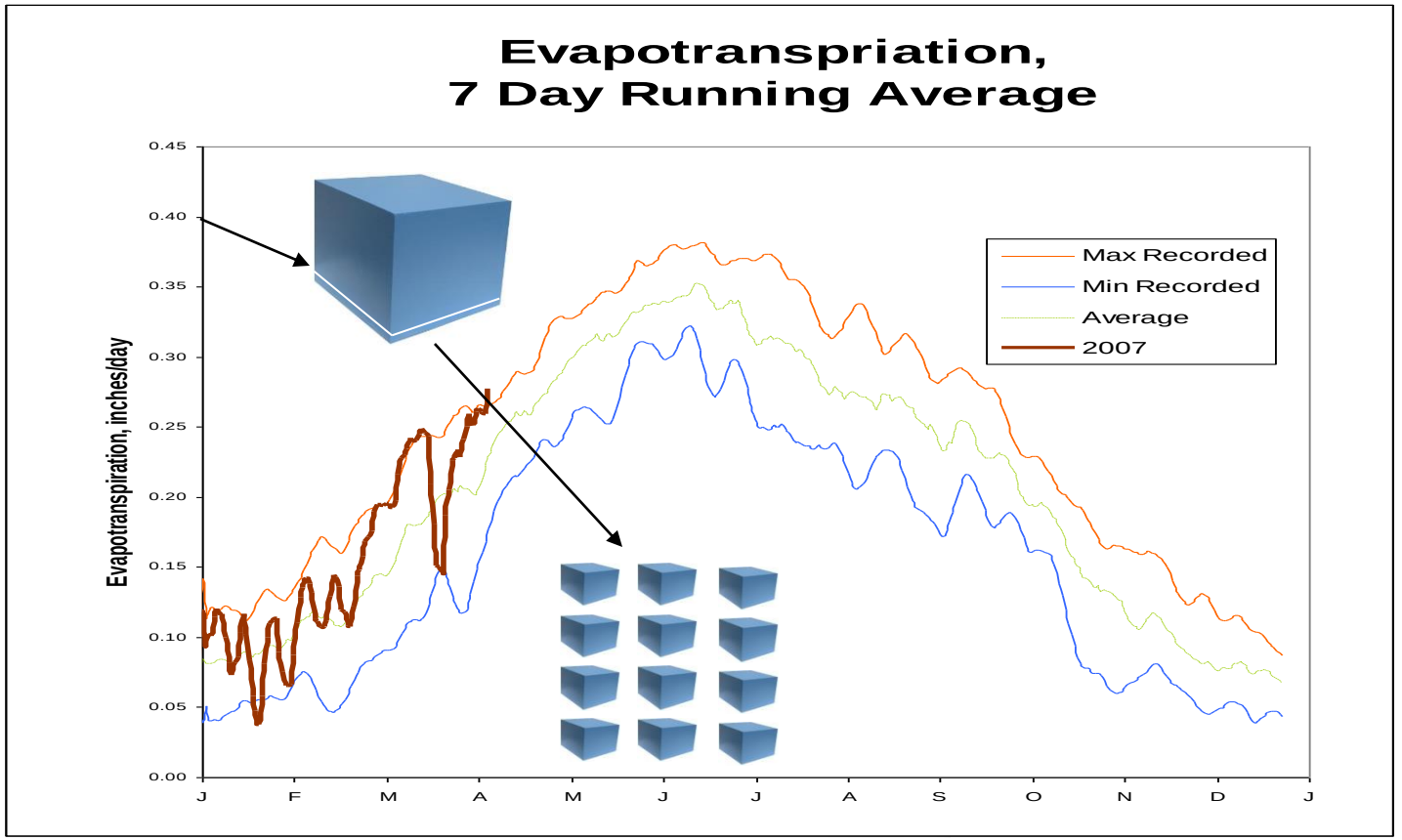


Evaporation From Lake Surface



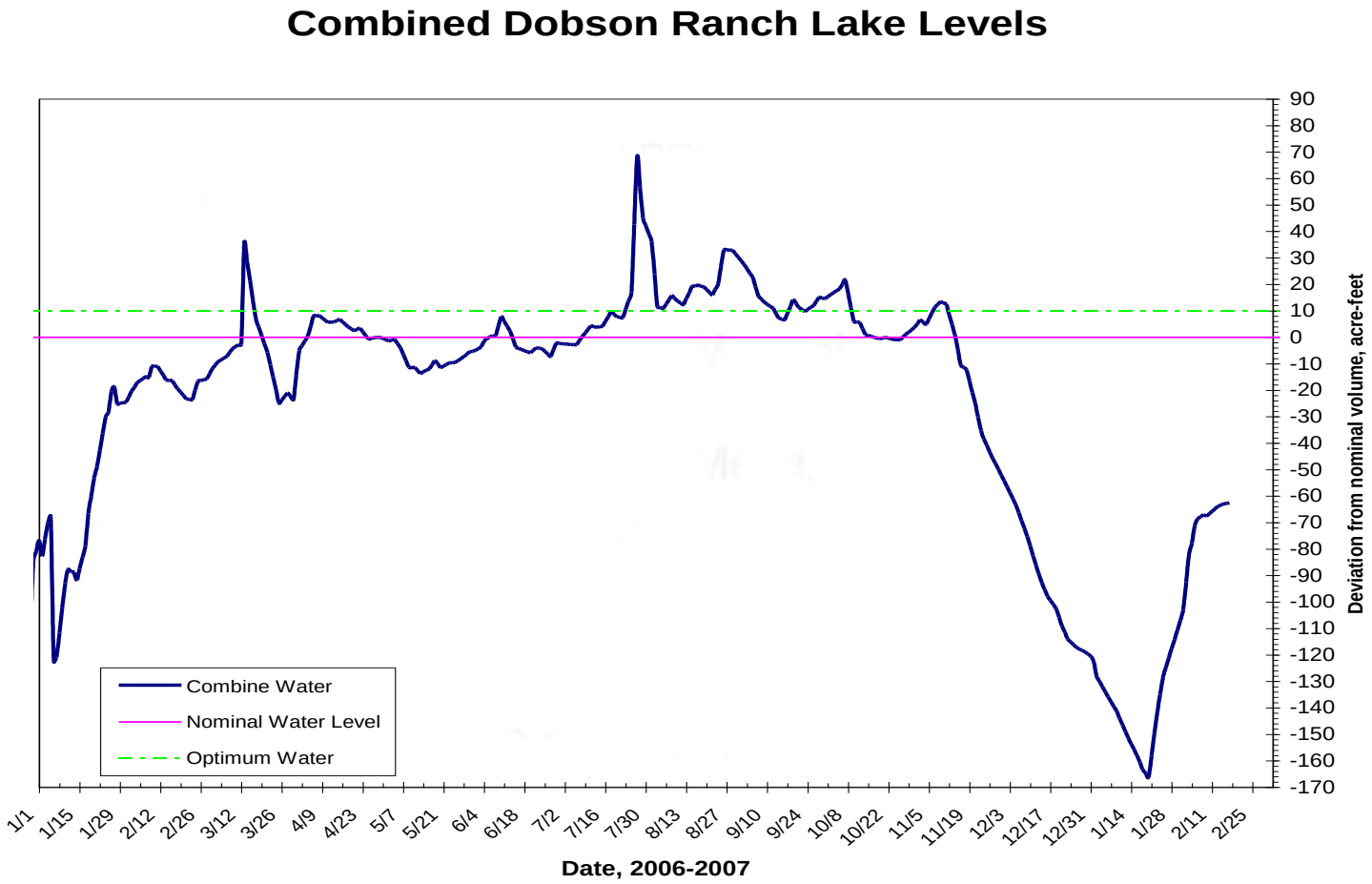
23 million cubic feet of water evaporate each year from the surfaces of the lakes,
That is 65,000 ft^3 per day

Tracking Water Consumption Through Evapotranspriation



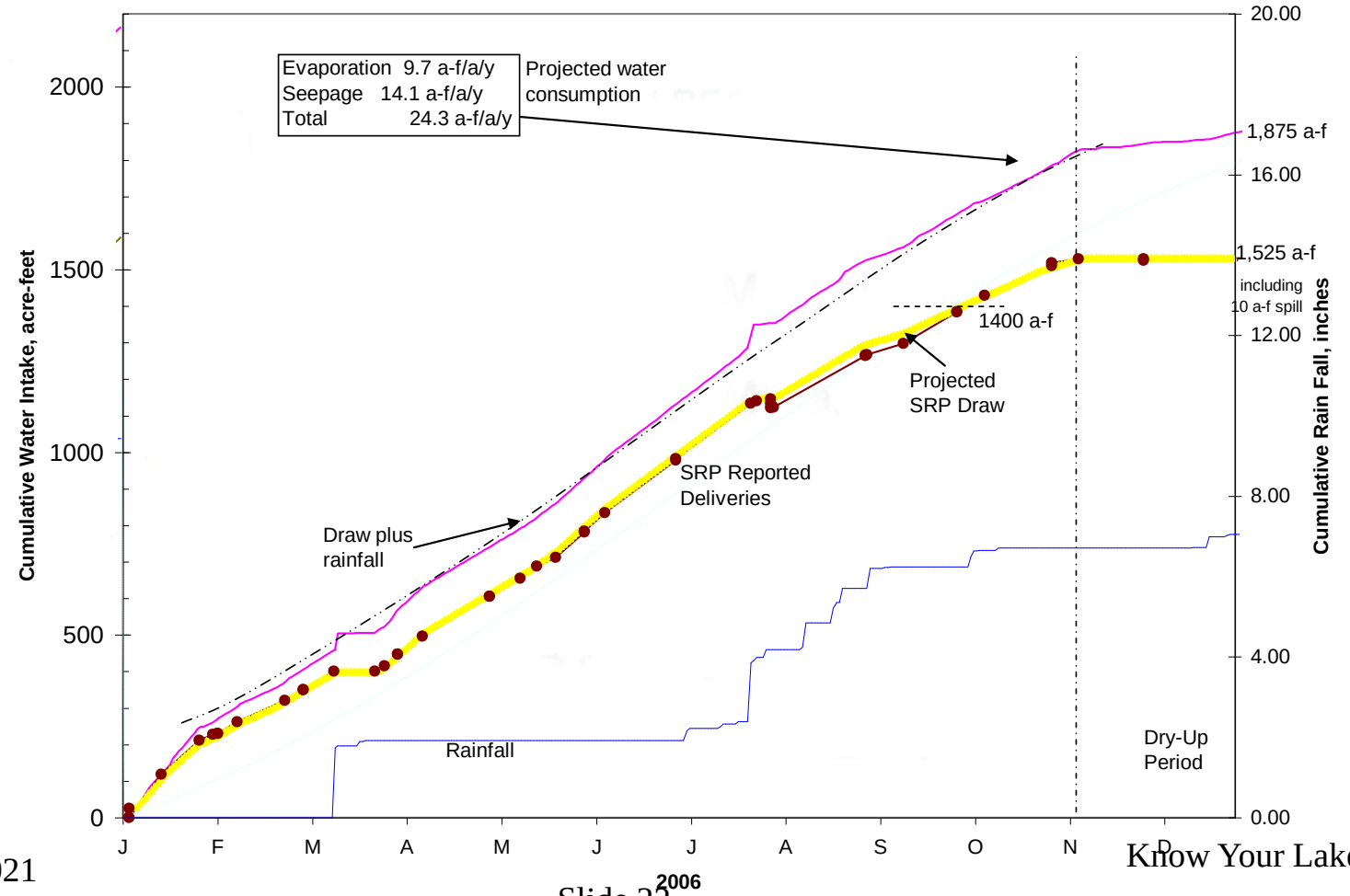
0.4 in. per day lost to evaporation = 12 ft^3 per year across all the lakes

Dobson Ranch Stored Water

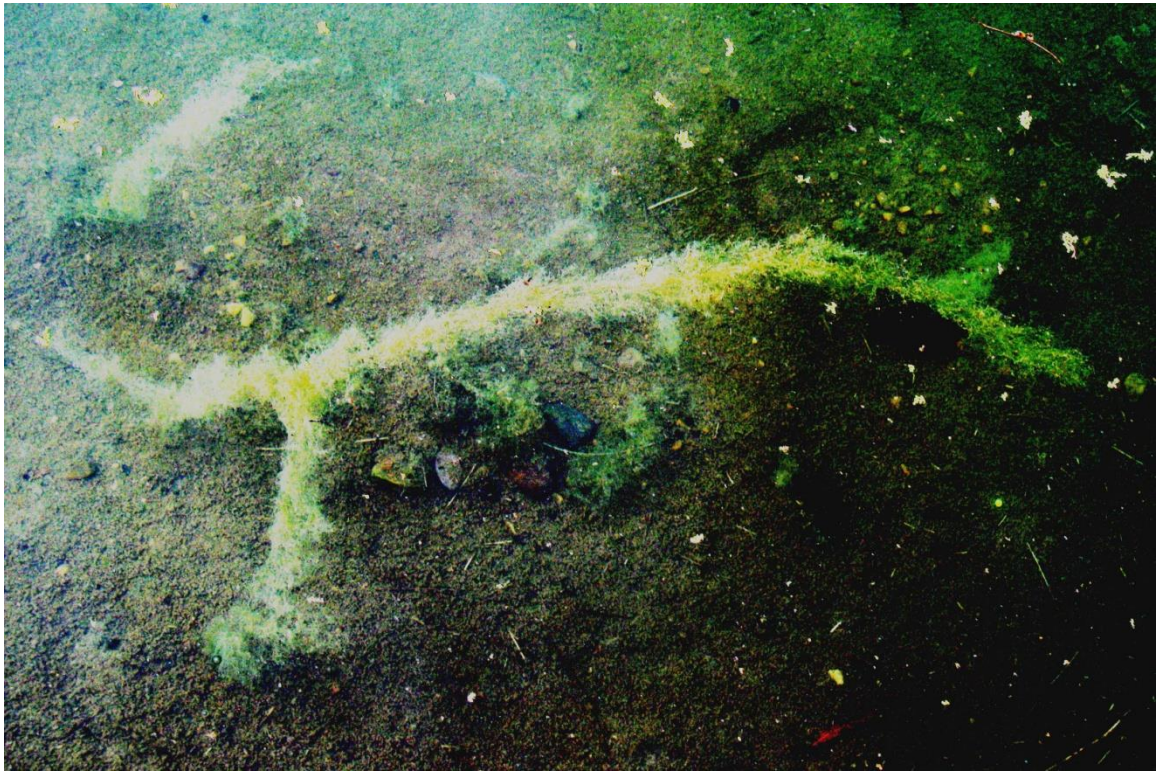


Active Control of Water Usage

Dobson Association Water Intake 2006



Brittle Niad



The DOBSON Association

Dobson Ranch
Water Conservation Program

Conservation through education
- Survey Home Owners
- Vendor fair
- Irrigation Conservation

Raw Water Conversion Program
- Feasibility Study
- Engineering Study
- Pilot Program

Drought Management Plan
- Plan Developed
- Follow City of Mesa
- Positive actions

Developed in conjunction with Water Management Committee, Dobson Ranch Staff, Human Productivity Center and ADWR

The DOBSON Association

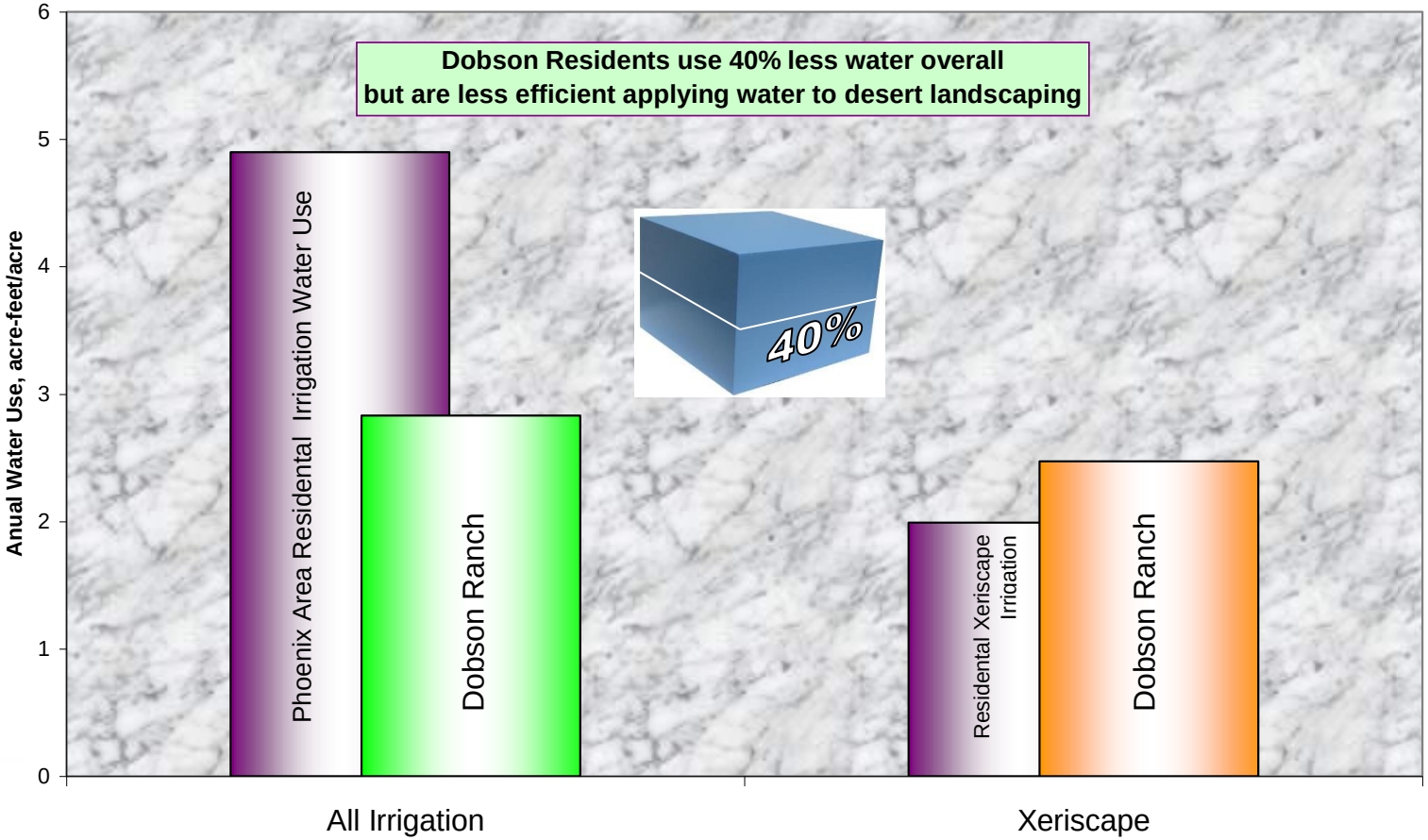
How big is your patch of grass?

10ft x 10 ft patch

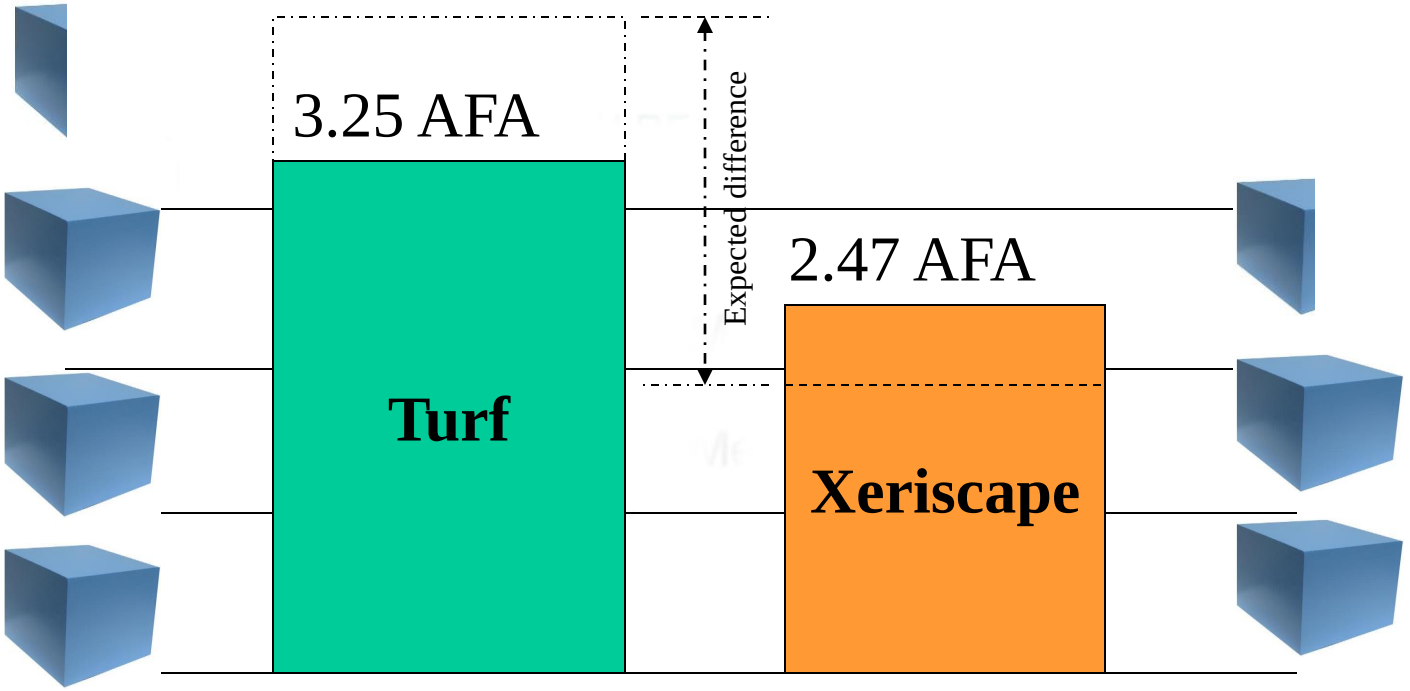
Requires 3,340 gallons of water over the course of 1 year to keep green

Watering for 1 minute longer than required wastes 650 gallons per year
Watering 5 minutes extra each day doubles the amount of water consumed

Dobson Ranch Residential Landscape Water Use



Initial Study Results



External Water Use for Xeriscape vs Turf Landscapes

Focus on retaining and improving irrigation effectiveness

Large Selection of Irrigation Controllers

Some Smarter than others

Manufacturers

Listed alphabetically

This listing is provided as informational only and is not an endorsement of any company or smart sprinkler controller

Acclima
AccuWater
Accurate WeatherSet
Alextronix
Aqua Conserve
Base Line
Calsense
ET Water Systems
Hunter Industries
HydroEarth
HydroPoint
Irrisoft
Irritrol
Irrometer Company
Micromet USA
Motorola
Nelson Turf by Acclima
Rain Bird
Rain Master
Signature Control Systems
Toro
Water2Save
Weathermatic
Weather Miser

Setting Your Controller

Here are some instructions on setting and adjusting some non smart sprinkler controllers:

- **Rain Bird**
- **Champion**
- **Orbit**
- **Hunter Industries**

Lake 3 Drought Plan Pilot

Plan identified turf strip as priority candidate for conversion

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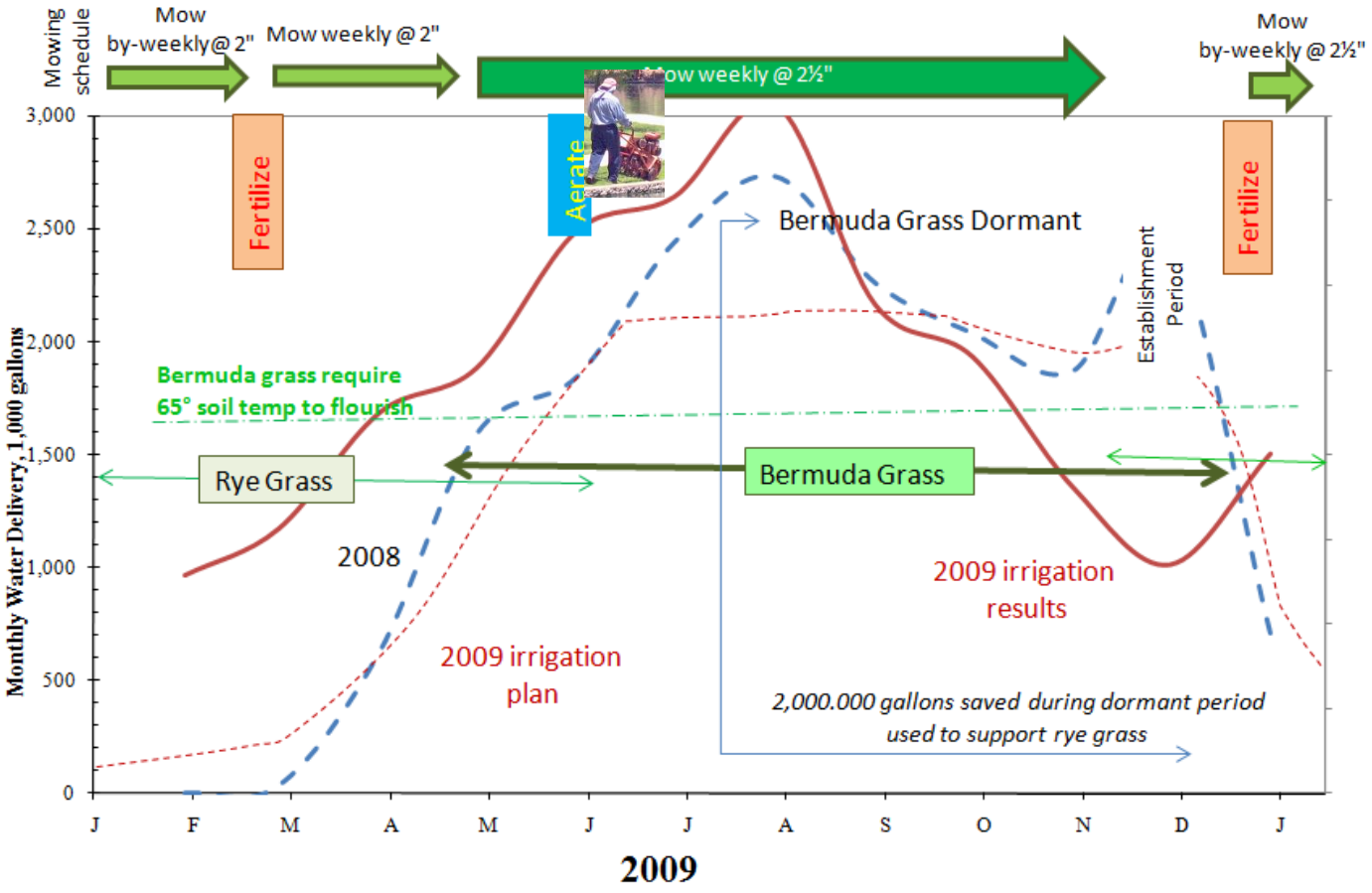
Dobson Ranch 2009 Irrigation Plan



The DOBSON Association

Water Conservation Fair
In Conjunction With April Garden Tour

10-15 Vendors Sell/Demonstrating Products

Topics for discussion

- *COMMUNICATIONS*
- *IMPROVEMENTS TO LAKES*
- *RESOURCES*
- *LAKE ACCESS*
- *UNIQUE FEATURES and AREAS OF IMPROVEMENT*
- *WASTEFUL*
- *RECREATION*
- *FISHING*
- *BOATING*
- *WATER CONSERVATION DRY-UP*
- *WEED and PEST Control*