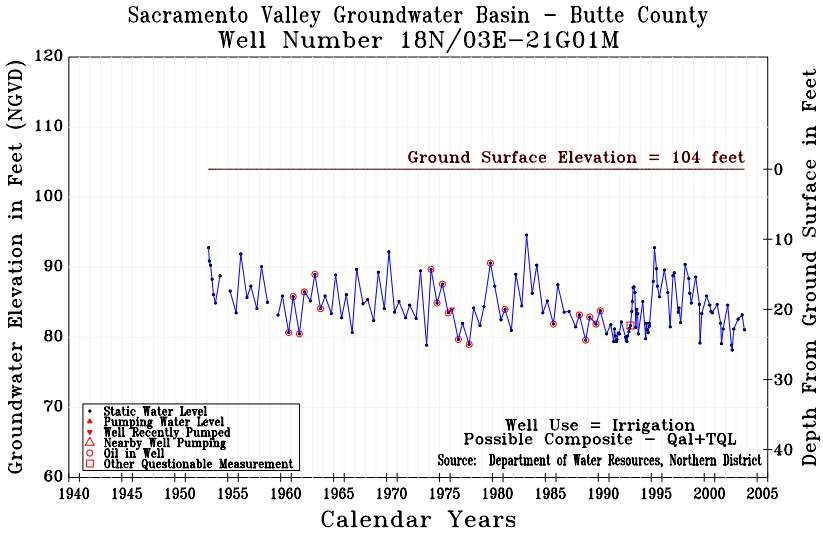
Thermalito Sub-Area (Well Number 18N/03E-21G01M):

The figure below is a hydrograph for well 18N/03E-21G01M, located in the southern portion of the Thermalito Sub-area, approximately one-mile west of the Feather River. The area surrounding this well is characterized as rural agricultural. Agricultural cultivation in this area consists of orchard crops supported primarily by groundwater extraction. This well is an active irrigation well producing groundwater from the shallow to intermediate portion of the aquifer system. The groundwater level measurement record dates back to the late 1940s. Groundwater levels in this well were monitored on a semi-annual basis to 1991, and on a monthly basis from 1991 to about 1994. Since 1994, this well has been monitored four times a year during March, July, August and October.

This figure shows an interesting spring to summer fluctuation in groundwater levels between normal and drought years. The range of spring to summer fluctuation in groundwater levels is about 5 to 8 feet during years of normal precipitation, but then decreases during years of drought to about 2 to 5 feet. A closer look at the hydrograph shows that the decrease in spring to summer fluctuation is the result of a drop in spring groundwater levels, while the summer levels remain constant. The drop in spring groundwater levels indicates that the aquifer system in this area does not fully recharge during years of drought. The quick drop, then relatively constant draw down during drought years, indicates that the aquifer system in this area is likely being recharged from a steady source of surface water; in this case the Feather River. During drought years, groundwater levels drop relatively quickly until they reach the point where the aquifer is interconnected with the Feather River. The hydrograph indicates that, in this area, the surface water – groundwater interconnection takes place at about 23 feet below ground surface, or at an elevation of about 80 feet above mean sea level.

Long-term comparison of spring-to-spring groundwater levels show an overall decline of 5 to 8 feet during the 1976-77 and 1986-94 droughts, followed by recovery to pre-drought levels. Further long-term comparison of spring-to-spring groundwater levels during normal years indicates very little change since the late 1950s.



Hydrograph for Well 18N/03E-21G01M

Successive spring groundwater levels have declined steadily in this well by about 1½feet per-year since 1998. Fall and summer groundwater levels have also declined but at a slower rate of about ½ feet per-year during the same period. These declines are probably climate related and not the result of over utilization of the groundwater resource. An examination of the overall record reveals that long-term depletion of groundwater in storage is probably not occurring at this time. It is anticipated that when annual precipitation returns to a more normal pattern that groundwater levels will fully recover