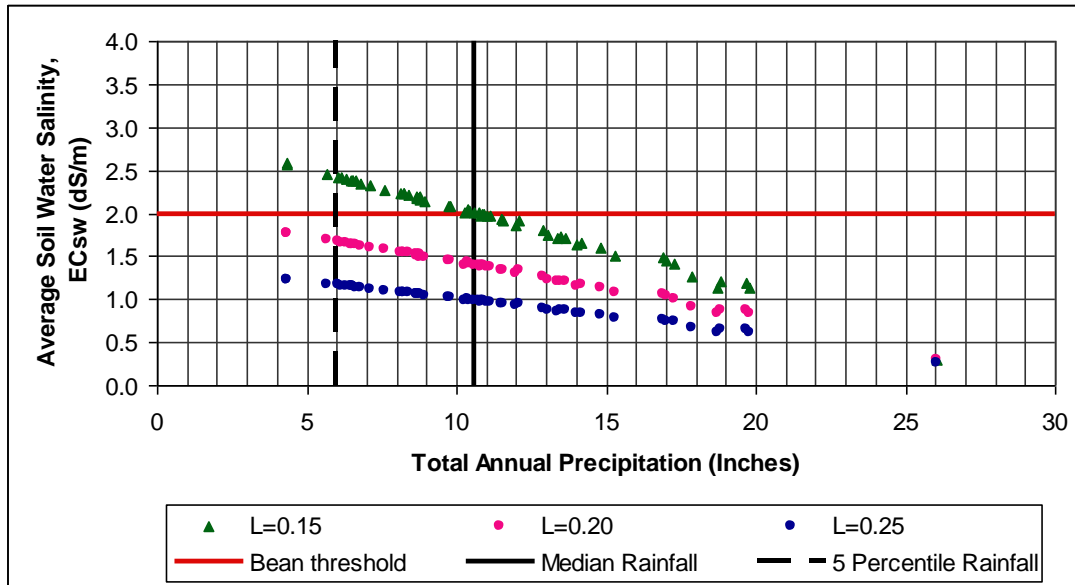


## Hoffman model variables and model results

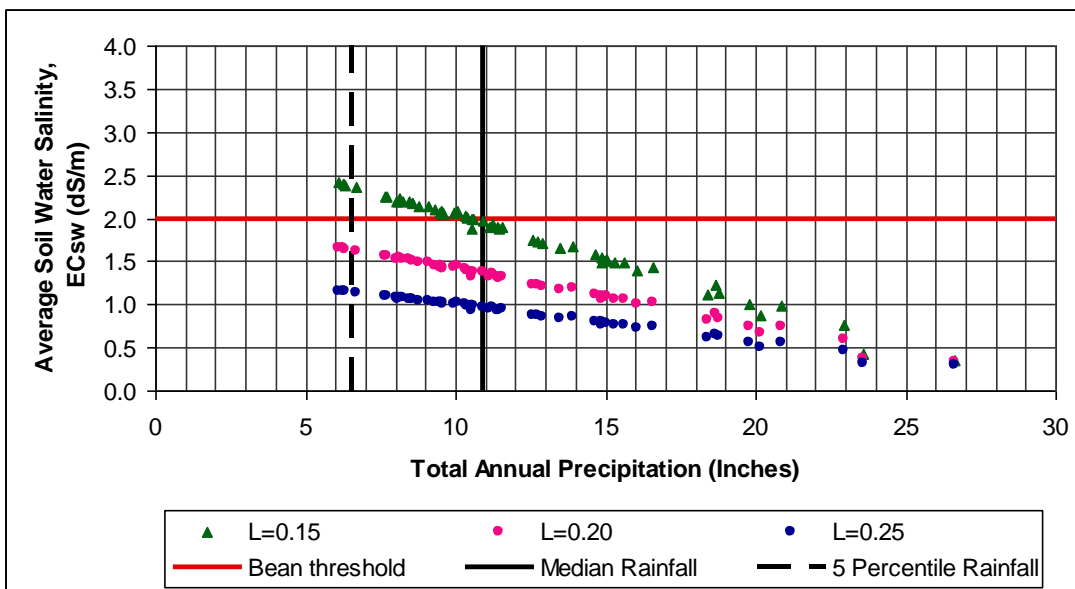
Parameter	Comments
<b>Mutable</b>	
Crop protection fraction	Set at 100%, could vary
Runoff Coefficient	One of the least sensitive parameters
Bare soil evaporation during non-growing season	Probably not worth pursuing information to support a change
$K_c$ - Crop coefficients	One of the most sensitive parameters
Irrigation efficiency	One of the least sensitive parameters
Leaching fraction	Range from 15% to 25%, leaching fraction less than 15% can lead to buildup of salt in soils
<b>Crop salt tolerance</b>	
$EC_i$ – EC of irrigation water	Range from 700 to 2000
$EC_{SW}$ – Avg soil water EC	
$EC_e$ – Soil extract EC	= 2 x $EC_{SW}$
$EC_w$	
<b>Immutable</b>	
<b>Day/Month/Year</b>	
Precipitation/Temperature	Can run for wet and dry years and several in between and use to structure objectives based on water year type
<b>Growth cycle dates</b>	
<b>Extraterrestrial radiation</b>	
$ET_c$ – Crop evapotranspiration	= $K_c \times ET_0$

**Figure 5.8b. Average soil water salinity ( $EC_{sw}$ ) vs. total annual rainfall for bean with leaching fractions ranging from 0.15 to 0.25 and irrigation water ( $EC_i$ ) = 1.0 dS/m using the exponential crop water uptake function\* with precipitation from NCDC station no. 6168, Newman C (for Crows Landing and Patterson) and NCDC station no. 5738, Modesto C (for Maze) for the water years 1952 through 2008.**

**b1) Crows Landing and Patterson**



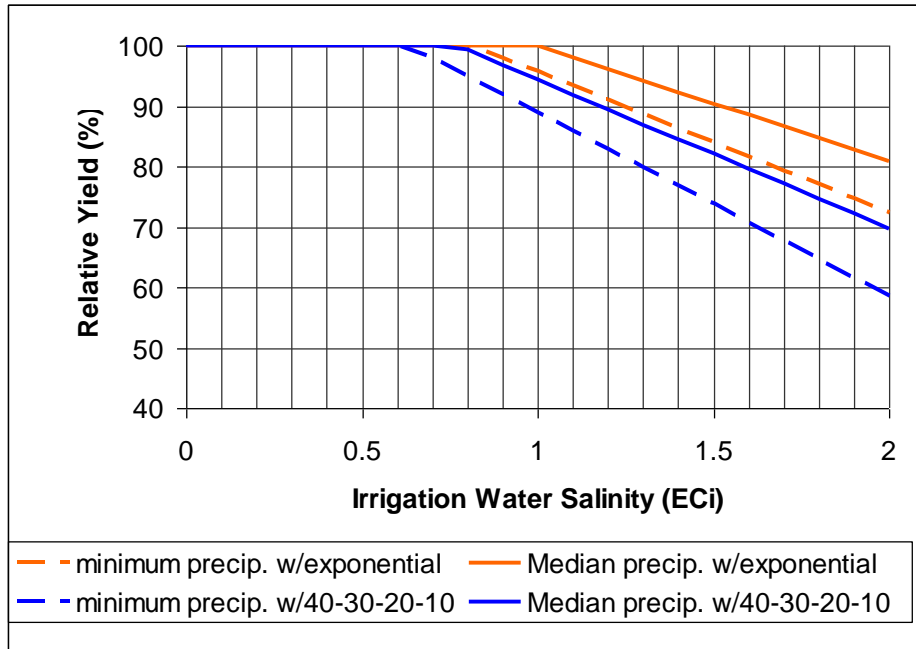
**b2) Maze**



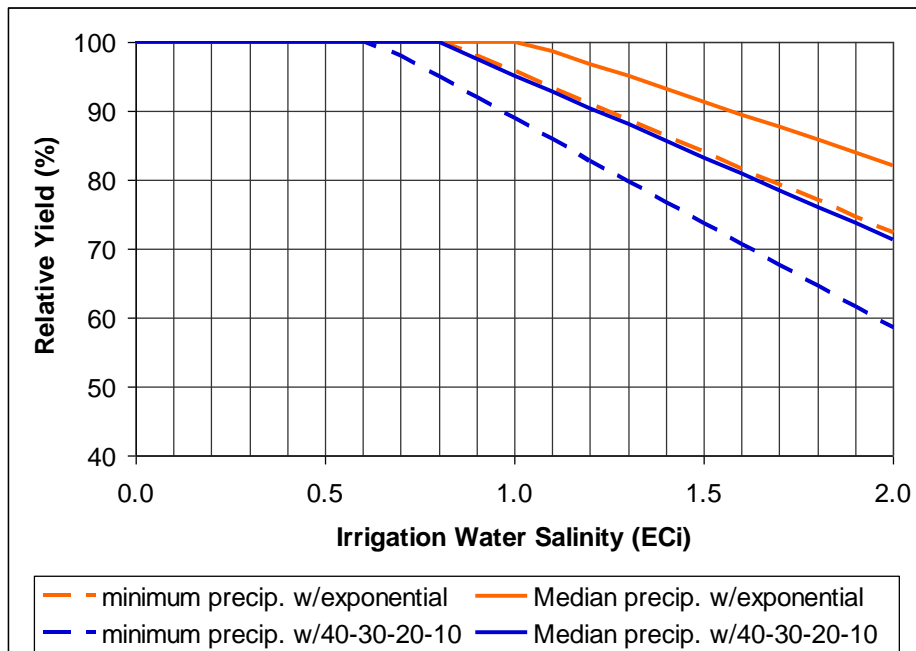
\* As discussed in Section 4.1, the average soil water salinity was reduced by the soil salinity at 50% leaching for the exponential model.

**Figure 5.9a. Relative bean yield (percent) as a function of irrigation water salinity ( $EC_i$ ) with  $L = 0.15$  assuming median precipitation (solid lines) and minimum precipitation (dashed lines) from NCDC station no. 6168, Newman C (for Crows Landing and Patterson) and NCDC station no. 5738, Modesto C (for Maze) for water years 1952 through 2008.**

**a1) Crows Landing and Patterson**

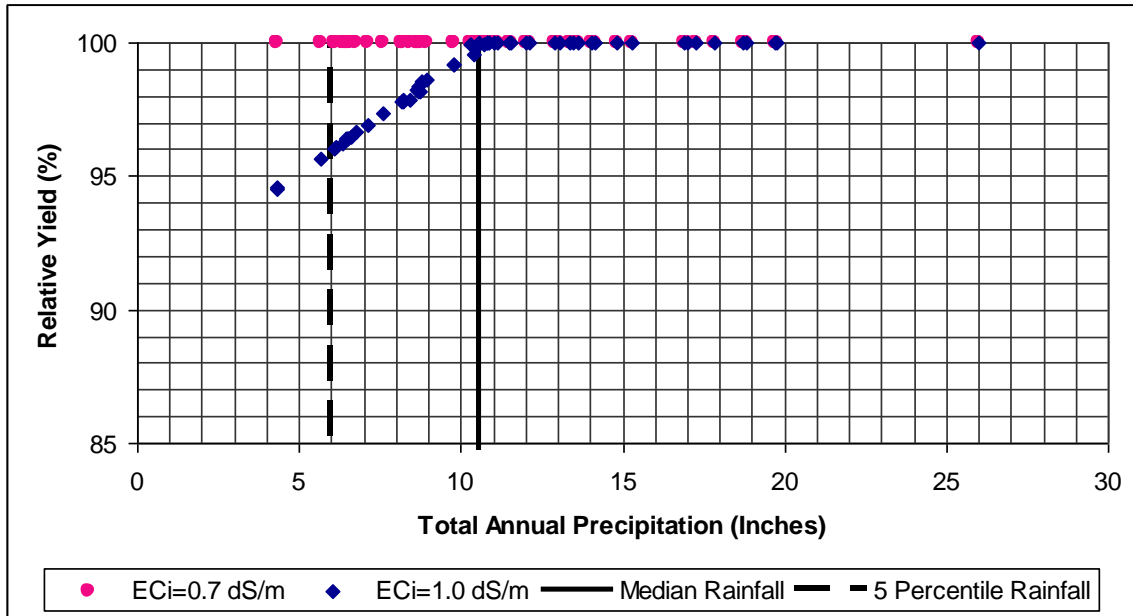


**a2) Maze**

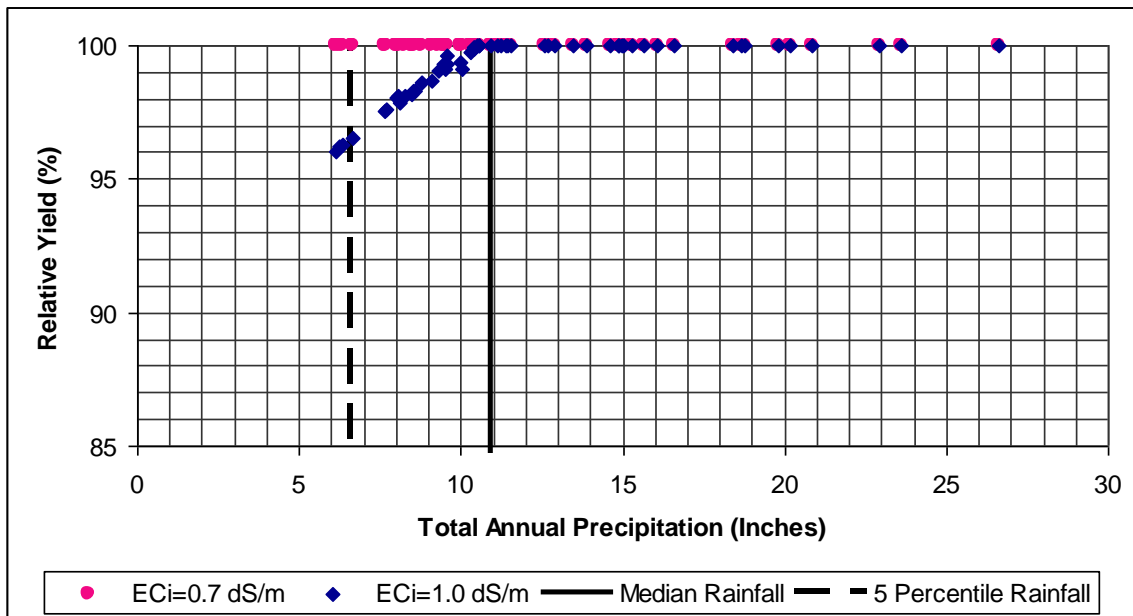


**Figure 5.10. Relative crop yield (%) for bean with  $L = 0.15$  at  $EC_i = 0.7$  and  $1.0$  dS/m vs. total annual rainfall using the exponential crop water uptake function\* (precipitation from NCDC station no. 6168, Newman C (for Crows Landing and Patterson) and NCDC station no. 5738, Modesto C (for Maze) for water years 1952 through 2008.**

**b1) Crows Landing and Patterson**



**b2) Maze**



\* As discussed in Section 4.1, the average soil water salinity was reduced by the soil salinity at 50% leaching for the exponential model.