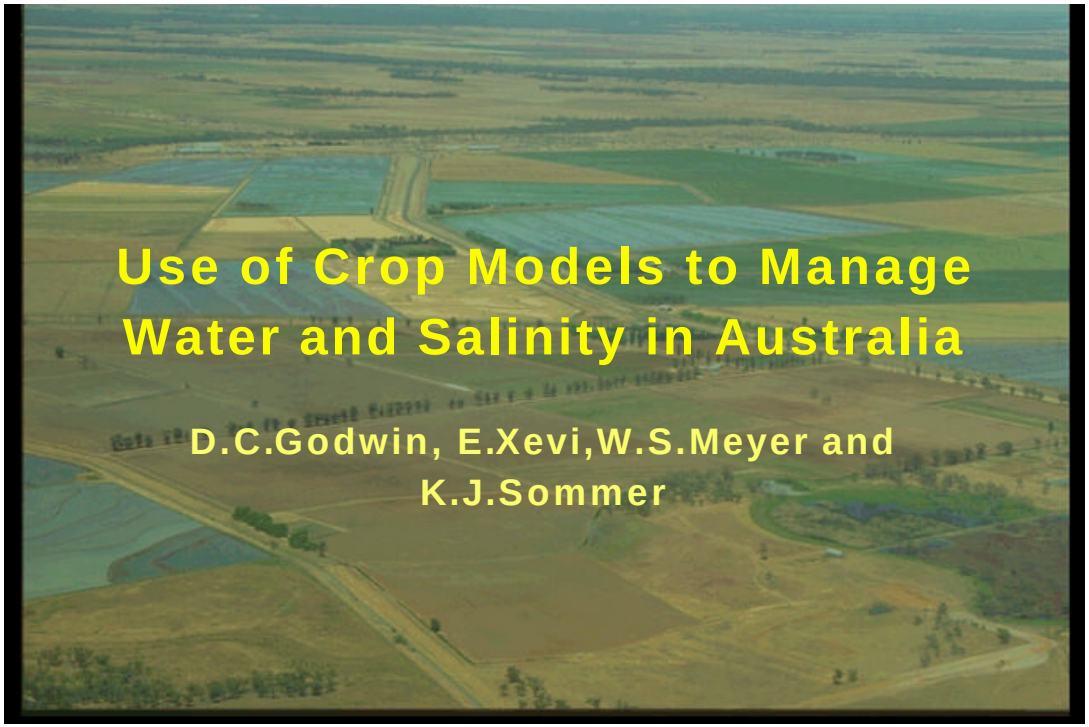


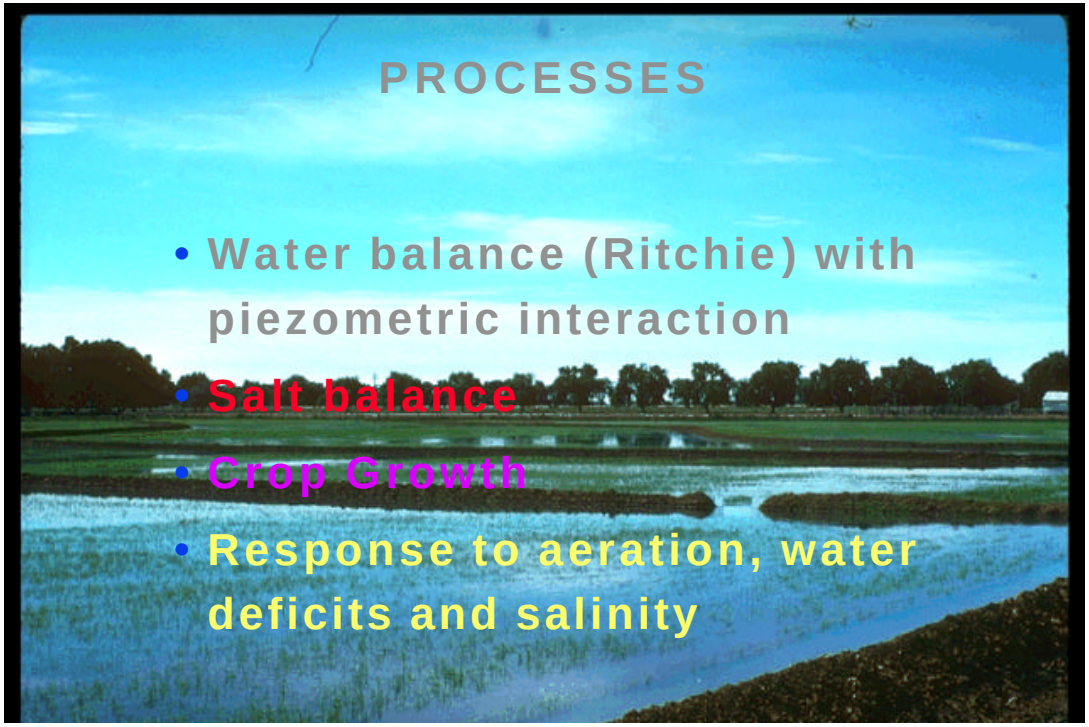
Use of Crop Models to Manage Water and Salinity in Australia

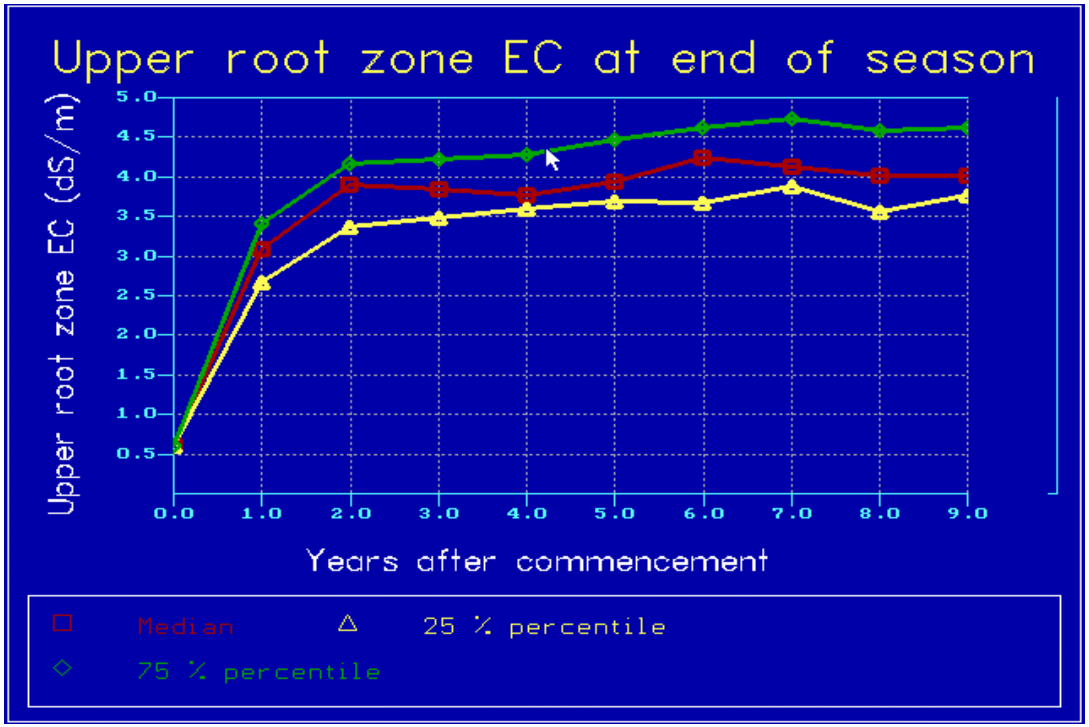
D.C.Godwin, E.Xevi,W.S.Meyer and K.J.Sommer

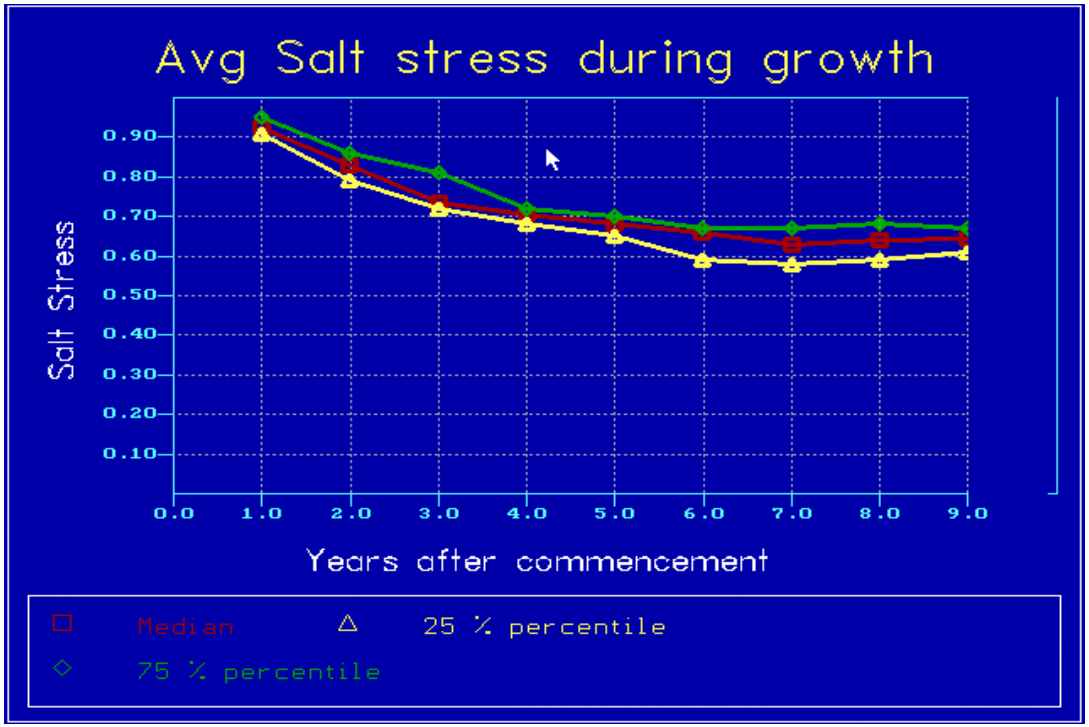

THE PROBLEM
Australia has:
• 30 million ha of land affected by salinity
• 2 million ha of irrigated land
• 25-30% of irrigated land is affected by shallow watertables

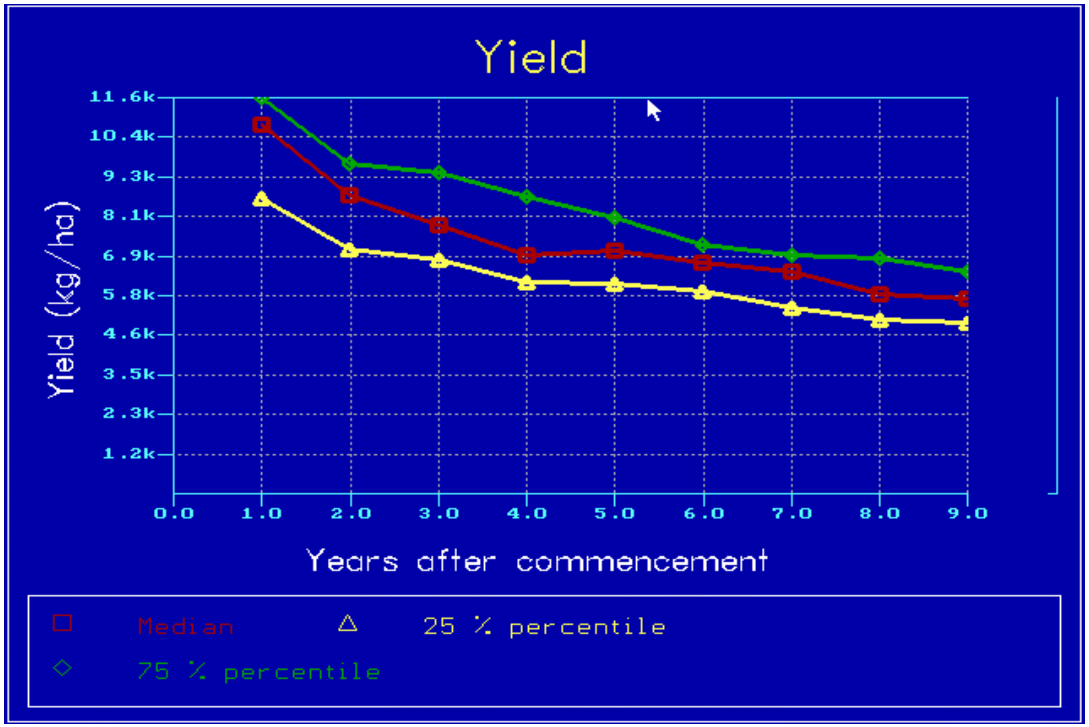
Estimates future trends in:

- ***crop yields***
- ***groundwater levels***
- ***salinization***
- ***production costs***


PROCESSES
• Water balance (Ritchie) with piezometric interaction
• Salt balance
• Crop Growth
• Response to aeration, water deficits and salinity


Upper root zone EC at end of season
Upper root zone EC (dS/m)
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
Years after commencement
Median
25 % percentile
75 % percentile


Avg Salt stress during growth
Salt Stress
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
Years after commencement
Median
25 % percentile
75 % percentile


Yield
11.6k
10.4k
9.3k
8.1k
6.9k
5.8k
4.6k
3.5k
2.3k
1.2k
Yield (kg/ha)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
Years after commencement
Median
25 % percentile
75 % percentile

DESTINY APPLICATIONS

- Management Guidelines for irrigation
- Education
- Research tool

SWAGMAN DESTINY PACKAGE

VERSION 3.0 for WINDOWS

AVAILABLE 2001