What have I learned from Working with Pur Data

- Databases are the key for Environmental Management
- Computer technology is still advancing at a dizzying pace
- Data by itself has limited value, and its value decreases with time

What have I done and How did I get to this point

- Agronomy & Range Science 1997-2001
- Gis with ArcInfo and ArcView
- Mapping United States Ag Production
Basins EPA’S Watershed Modeling Program

- Basins is a Program and Database for Watershed Analysis
- Distributed By US EPA at no charge
- Program is Available on the Internet
- Data for Any Watershed in the US is available on the Internet for downloading at no cost
- Basins 3.0 - is the latest version (June 2001)
Introduced to Pur Data

- Data by year was available on CD-Rom
- First problem was with Outliners
- Calc Mean & Std and look for data > 3*Std
- Most Outliners easy to correct with analysis
- Outliners Easy to Remove with simple script
- Understanding Chemicals by Target Problem
- Understanding Chemicals by Potential Harm

How could the PUR data be used

- Generate Reports of Applications by Year
- By Counties, Crops, Chemicals
- Generate Maps of Applications
- Who would be interested in Reports or Maps
- How do Corporations generate Reports
- Reports are designed for managers
How could the PUR data be used

- Most Reports usually have 2 years of data
- To Provides a view of Present Status
- And a view of Direction

- At this time 1998-1999 Hard Disks ~ 1GB
- To have multiple years we needed ~ 5GB
- 20GB Hard Disks just became available

How could the PUR data be used

- To Generate Reports from Multi-year data
- ArcView provided “Avenue”, a programming language good for database management and automatic map generation
- Reports require formatting for easy reading
- Excel provides excellent macro generation capability using Visual Basic
'Script Name: `fun Run_CtyByChem`'
'Uses Program to generate data for a Cty Report by Crop
'Requires Subprograms
  `OpenTable`
  `Fun: Fun.GetSub`
  `TableBrowseTable1` (a system program)
  `Fun: Fun.RptByChemBrowseBlank()`
  `Fun: Fun.RptByChemAddFields`
  `Fun: Fun.RptByChemAddFields()`
  `To move data to Excel open Excel with Personal2.xl4d`
  `and execute `RptBySiteStore``
In Excel execute macro(s) RptBySite1, 2, 3 in succession

(1) Enter the Cty Code for the Cty of Interest
   for each cty in 01, 01
   if (cty < 10) then ctyStr='0'+cty as String
   ctyStr= cty As String and end
(2) Enter the Year of Interest for this table
    Yr = 99
    yStr=year As String
    defYr = 1
(3) Enter Path name for PAR data
    parDir = "E:\ParData\03\99"
(4) Enter the Directory for output table
    outDir = "E:\\NewScripts"
(5) Enter Directory for Temporary files (need for AcreFlat)
    tmpDir = "E:\\Temp"
(6) Enter the name of the Chemical File
    chemName = "Chemical_Bal.dbf"
(7) Enter the name of the Site File
    siteFile = "Crop dbf"

Open The Chem Database file
chemTab = a Run(`Fun: Fun.OpenTable` parDir. chemFiles)
chemTable = Table.Have(chemVTab)
if (chemTable = null) then
    MsgBox Info(`File =chemFile+ NOT found”, ”OpenVTab”) exit

Dim CtrName As String
Sub RptByChem()
    "Macro recorded 09/21/2000 by Penny Parreau
    "Formate Apgo-08\MpropChem.dbf, NF county code
    CtrName = Range("F11").Text
    Call RptByChem
    Call RptByChem1
    Call RptByChem2
End Sub
Sub RptByChem1()
    "Macro 1st run
    "Macro recorded 09/21/2000 by Penny Parreau
    "Insert the code
    Columns("C","C").Select
    Selection.Insert Shift:=x1971121
    Selection.ColumnsWidth = 5.5
    Range("F11").Select
    Columns("C","C").ColumnsWidth = 22
    Columns("B","B").ColumnsWidth = 22
    Columns("E","E").ColumnsWidth = 22
    Columns("F","F").ColumnsWidth = 22
    Columns("G","G").ColumnsWidth = 22
    Columns("H","H").ColumnsWidth = 22
    Columns("I","I").ColumnsWidth = 22
    Columns("J","J").ColumnsWidth = 22
    Columns("K","K").ColumnsWidth = 22
    Columns("L","L").ColumnsWidth = 22
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    Columns("P","P").ColumnsWidth = 22
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    Columns("S","S").ColumnsWidth = 22
    Columns("T","T").ColumnsWidth = 22
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    Columns("V","V").ColumnsWidth = 22
    Columns("W","W").ColumnsWidth = 22
    Columns("X","X").ColumnsWidth = 22
    Columns("Y","Y").ColumnsWidth = 22
    Columns("Z","Z").ColumnsWidth = 22
    Columns("A","A").ColumnsWidth = 22
    Columns("B","B").ColumnsWidth = 22
    Columns("C","C").ColumnsWidth = 22
End Sub
Sub RptByChem2()
    "Macro recorded 09/21/2000 by Penny Parreau
    "Insert the code
    Range("F11").Clear
    Exit Sub
End Sub
How could the PUR data be used

- Reports for the State – Overall View
- Reports for the Counties – Local View
- Reports by crops & fields – Crop View
- Reports by crops & grower – Grower View
- Reports to people who make decisions
- Ag Commissions & Growers
- Crop Boards – Extensions agents
<table>
<thead>
<tr>
<th>State</th>
<th>Crop</th>
<th>Acres Planted</th>
<th>Acres Fin.</th>
<th>Acres Fin.</th>
<th>Acres Fin.</th>
<th>Acres Fin.</th>
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</table>

**Total Acres Planted:** 27,000,000

**Total Acres Fin.:** 40,500,000
### Chemicals List

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<th>Chemical Code</th>
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<th>SrHg (Ac)</th>
<th>S999 (Ac)</th>
<th>S999 (Lug)</th>
<th>Delta</th>
<th>SrHg (Lug)</th>
<th>S999 (Lug)</th>
<th>Delta</th>
<th>SrHg (Bad)</th>
<th>S999 (Bad)</th>
<th>Delta</th>
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<td>G.S.D.TIOTYL</td>
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<td>3.019</td>
<td>(0.928)</td>
<td>499.576</td>
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<td>(146.339)</td>
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<td>5.078</td>
<td>23.734</td>
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<td>157</td>
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<td>5.059</td>
<td>3.633</td>
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<td>537.100</td>
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</table>

### State Chemical (AI)

<table>
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<tr>
<th>SrHg (Ac)</th>
<th>S999 (Ac)</th>
<th>Delta</th>
<th>SrHg (Lug)</th>
<th>S999 (Lug)</th>
<th>Delta</th>
<th>SrHg (Bad)</th>
<th>S999 (Bad)</th>
<th>Delta</th>
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<tr>
<td>21.71</td>
<td>21.21</td>
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</table>

**Note:** The table above lists various chemicals with their corresponding chemical codes, names, and classifications. The data includes the amount in pounds and litres for different categories such as SrHg, S999, and Delta.
<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Type</th>
<th>Lbs/Type</th>
<th>Delta Count</th>
<th>SSBU Count</th>
<th>SSBU Lbs/Chem</th>
<th>Delta Count</th>
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**Graph**

- **X-axis**: Percent P65
- **Y-axis**: Lbs/Acre

**Legend**

- Peppers
- Carrots
- Potatoes
- Peaches
- Apples
- Cherries
- Strawberries
- Cantaloupes
- Tomatoes
- Tomatoes, proc
- Walnuts
- Dates
- Lettuce, Head
- Alfalfa
- Cotton
- State avg
- State avg /2

**Notes**

- The graph shows the relationship between the percent of P65 and the corresponding lbs per acre for various crops and horticultural products.
- The data includes a range of values for each category, indicating variability within the parameters.
- The graph is labeled with specific crops and their respective categories for easy identification.
What does History tell Us?
Kings Cnty 1999 Insecticides

Kings Cnty 1999 Scatter
How could the PUR data be used

• Spatial Maps by Counties
How could the PUR data be used

• Spatial Maps by Watershed
Agricultural Production Data & Pesticide Use Data

- Are both reported to the State by County
- But by Different Systems
- We present Crop Production vs Pesticide Use
- Planted Acres vs Harvested Acres
- Provides some measure of control

Agricultural Production Data

- Assembled by Dept of Food & Agriculture
- Obtained from County Ag Commissioner Annual Report
- Data includes Harvested Acres
- Also Production, Yield, and Value
Pesticide Use Data

- Assembled by Dept. Pesticide Regulation
- Data on Amount and Type of Pesticide used
- Data includes Planted Acres
- Data on Location and Crop and Acres Treated
- Reported to County Ag Commissioner
- From Pesticide Use Reports
- Submitted by Growers and C P(esticide) A's

Ag Commissioner Data vs Pesticide Use Data

State Totals for Almonds (3001) 1990-1999

Selecting Growers for Diazinon Outreach Program

Romeo R Favreau
Vision Statement

• We would like to identify Growers of Stone Fruit Orchards who have the greatest potential of reducing Diazinon runoff.

Goal and Objective

• Develop a list of Growers by county that have the highest potential of reducing Diazinon runoff
• Ask the county Ag Commissioners to convert grower_ids to one or more mailing lists
• Reduce the # of required Outreach courses
What have I learned from Working with Pur Data

- Databases are the key for Environmental Management
- Computer technology is still advancing at a dizzying pace
- Data by itself has limited value, and its value decreases with time
- Real-time Analysis and Feedback to responsible managers should help attain goals