

# User-Friendliness and New Tools

# User-Friendliness

- Interactive input approach
  - part of model or separate preprocessor program
  - questions and answers or multiple choice responses
  - informative error responses that provide choices to resolve problems
  - update an existing data input file with minimum effort

# User-Friendliness

- Interactive input approach
  - complete check of all inputs
  - default values
- Menu-driven operation
  - to prepare data, run model, plot output, etc.
- Graphic output
  - screen or hard copy

# New Tools

- Geographic Information Systems (GIS)
  - spatial data structure
    - set of relations to describe a geographical entity
  - computerized data base by cells -- land descriptor information
    - Virginia example
  - computerized retrieval of this data facilitates model input

# New Tools

- Expert Systems
  - use a model of expert reasoning and mimic human experts in solving problems
  - depends on knowledge base
  - heuristics -- rules of thumb
  - production rules -- condition-conclusion pairs (IF-THEN) reasoning logic

# New Tools

- Expert Systems
  - potential uses
    - estimate model parameters
    - provide data input
    - restrict model options to those suitable for particular problem
    - interpret model results in context of problem using rule-based knowledge
    - study sensitivity of a decision to changes in model parameters or user inputs

# New Tools

- Decision Support Systems
  - may combine GIS and expert systems concepts with models to aid in decision-making
  - user interface to facilitate formulating information for planning or decision-making
  - visual display of results from user-selected choices