Research Directions in Biodiversity and Ecosystem Informatics

http://bio.gsfc.nasa.gov

NSF, USGS, NASA, NBII Workshop

June, 2000

Dave Maier, Eric Landis

Judy Cushing, Anne Frondorf, Avi Silberschatz

Mike Frame, John Schnase (eds)

BDEI Workshop Summary

• CS/IT plays a foundational role in creating technology infrastructure for advances in environmental science

•The new systems needed to understand ecosystem processes require CS/IT solutions

• Urgent, complex and unique BDEI data, processes & problems create research opportunities for CS/IT

• Government & industry should support basic CS/IT research responding to BDEI challenges

Examples & Case Studies

communicating the need to CS/IT, funding agencies & Congress

- Species diversity in Silver Creek -- what if stream flow were closed
  - Need: topo maps; hydrology studies; fish counts; land use; model to project stream flow, water temp, downstream sedimentation, etc….
- Exotic plant invasions in Colorado & Utah
- New Columbia River Salmon endangered

<u>You</u> have similar compelling stories!

BDEI Research Agenda

Do your problems -- or those of your PIs -- fit?

- **Acquisition & conversion** of data and metadata

  ...modernizing the biological library….

- **Analysis & synthesis** of data and metadata

  … machine processable metadata ...

- **Dissemination** of data and metadata

  … data management guildelines ...

If so, consider partnering with CS/IT researcher(s)!

Implementing the Research Agenda

- Create interdisciplinary planning groups
- Match research needs with available mechanisms
- Initiate short term critical actions
  - NSF, NADSA, USGS partnership
    - seed projects in 2001-2, major program in 2003
- Communicate time-criticality to CS/IT
- Organize problem-specific consultant teams
- Communicate the research agenda

Why not a joint LTER IM-CS/IT workshop?