Conservation Cohort:
Expanding GIS in high school

PRESENTER: Erik Bushland
Combining AP Environmental Science and Introduction to GIS

• Students:
  - Primarily 10th grade
  - Enroll in:
    - AP Environmental Science
    - Introduction to GIS

• Teachers:
  - Work together
  - Team teaching not required
Purpose:

• Expand Understanding of GIS beyond Story Maps
• Show ways GIS is and can be used
  - Data collection
  - Data analysis
  - Critical Thinking
• Function as part of a lab component
• Help prepare students for the AP Environmental Exam
  - More time for learning
  - Experimentation
GIS supports Environmental Science

AP Teacher Identifies:
- Tested Areas
- Topics of Concern
- Time Table

GIS Teacher:
- Augments Lessons
- Develops Data Collection
  - Field – students actively gather data
  - Internet
Students Gain

Students:

- Study Topics
  - Learn about the environment
  - Environmental issues
  - Conservation efforts around the world
- Learn data gather techniques
  - Use GPS devices
  - Learn to use and setup the Collector App
- Learn Software
  - Collect data from around the world
  - Sort and organize data
  - Create informative maps
Invasive Species

Kudzu – image from Wikimedia commons
Example: Invasive Species

- **Environmental Class:**
  - Learn terms
  - Hazards
  - Attempts to limit, etc.

- **GIS:**
  - Collect and analyze data from sites such as:
    - The Global Invasive Species Database
    - Texas Invasive Database
  - Then visualize (maps/charts) the data:
    - Trends
    - Patterns

- **Back to Environmental Science for discussions and presentations.**
Endangered Species

Manatee - image from Wikimedia commons
Expected Results

❖ Increase in:
  ❖ student AP scores
  ❖ student interest in GIS
  ❖ student enrollment in GIS programs
Future Expansion

GIS Teamed with:
• World Health Research – Infectious Diseases, Heart Disease
• AP Human Geography – Urbanization, Population Growth, Distribution of Resources
• Wildlife, Fish, and Ecological Management