

EcoPDA Peripheral Devices: adding imaging and GPS functionality to the existing EcoPDA application

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Introduction: What Is EcoPDA?

A Valuable Tool for Field Researchers

The EcoPDA is a PocketPC application designed to assist researchers with data collection and organization in the field. It replaces the outdated pen and paper method of data collection, which is slow, cumbersome, and prone to errors. Additionally, peripheral devices such as a camera and a GPS transmitter expand the capabilities of the EcoPDA making it a more useful tool in the field.



Benefits of the EcoPDA

- **Faster**
 - Streamlines the data collection process through automatically generated data tables
- **More Accurate**
 - Labeled fields in the table standardize the format of the data collected at each site
 - Potential errors are eliminated because there is no need to transcribe the data
- **Flexible**
 - EcoPDA uses several protocols, collections of data sets and settings tailored to different field situations
 - Protocols enable the EcoPDA to be used in a variety of research settings

Goal: Expand the Capabilities of EcoPDA

Camera



- Allow users to visually document collection events
- Easily correlate pictures with observations by storing them in the database
- Conveniently attach the camera to the PDA

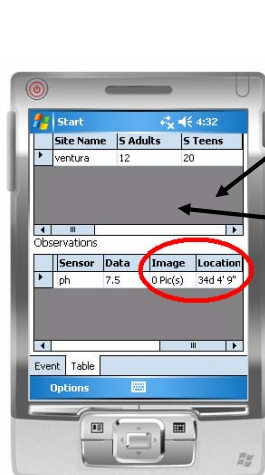
GPS

- Correlate observations with exact locations
- Store coordinates in the database along with pictures so that researchers will know where the pictures were taken
- Allow researchers to take observations from the same locations over multiple collection events



Implementation: Add Camera and GPS Capabilities

Image and Location Fields of the Observation Table

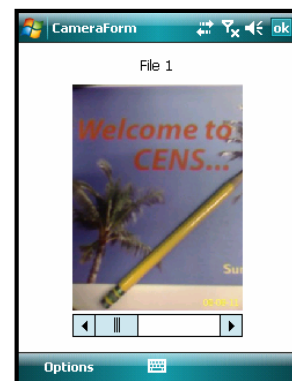


The location field shows the GPS coordinates at the time the observation was taken. Clicking on the box will update the coordinates.

The image field shows the number of pictures taken for each observation. Clicking on this cell will bring up a form to view, delete, and add new pictures.

GPS Implementation

- GPS uses the Microsoft GPS class to connect with the GPS transmitter to get coordinate data
- User has the option to connect a GPS device if one is available



Camera Implementation

- Camera uses the HP camera application to take and save pictures into a specified directory
- Created a windows form to interface with the third party application, which allows the user to view and delete pictures