Project Description

- Provide GPS and reference maps as part of field notebook
- Display collected data on reference maps using GIS and edit as necessary
- Return data to field notebook
What is GPS?

- Global Positioning System
- A system of linked satellites that tell receiver its geographical data
- Will help us locate where our samples will be taken and where we are on the field
What is a GIS?

- A Geographic Information System
  - Geographic - there is a spatial, or location, element in the data.
  - Information - there is information about the location.
  - Systems - there are multiple input and output devices, with many tools for acquiring, storing, manipulating and analyzing the data
- In general, GIS is computer hardware and software capable of storing, manipulating, and analyzing spatial data
Why are we using GIS?

- For acquiring location data through a GPS
- For displaying reference information that will help us decide where to sample
- GIS will be used for modeling after the trip
What is ArcPad?

- Program for viewing and editing digital maps
- Includes location data with each map
- Will be used for location and plotting
Group Goals

- Obtain GPS data and send to field notebook
- Provide maps for field reference
- Display data from field notebook on reference maps
- Edit data
- Provide edited data to field notebook
Context of GIS/GPS in Field Notebook

- GPS data
- Hydrolab data
- Field Notebook
- Reference maps
  - Display/Edit On GIS
  - Send edited data back to field notebook
What We’ve Done

- Outlined Tasks/Goals
- Set up GPS
- Searched for map data
- Learned how to add data to maps
- Wrote scripts to
  - Open GPS, Write GPS data to file, Close GPS
  - Read data from field notebook (in progress)
  - Write data from GIS for field notebook (in progress)
Sample map for local GPS test
Next Steps

- GPS
- Reference Maps
- GIS
GPS

- Complete *open, write to file for field notebook to read*, and *close* functions into one button
- Load and test GPS on all iPAQs
Reference Maps

- Get data from Kevin, Eric
  - Check data format (raster, vector data)
  - Make sure data is registered and compatible with mapping systems—that it can be used for geo-referencing
- Split it up into manageable fragments
GIS

- Write function for conversion of data from field notebook to shape file (*.shp)
- Design symbols for data types even before transposition onto map
## Task Deadlines

<table>
<thead>
<tr>
<th>Date</th>
<th>Task</th>
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</thead>
<tbody>
<tr>
<td>10/19</td>
<td>Get spatial data from Kevin and Eric</td>
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<tr>
<td>10/26</td>
<td>Complete GPS functions</td>
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<tr>
<td>10/26</td>
<td>Load and Test GPS on all iPAQs</td>
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<tr>
<td>ongoing</td>
<td>Check spatial data</td>
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<tr>
<td>ongoing</td>
<td>Form strategy for putting data on iPAQs</td>
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<tr>
<td>11/21</td>
<td>GIS/field notebook data conversion function</td>
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<tr>
<td>11/21</td>
<td>Design Symbols (work w/ FN groups)</td>
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Thank you for your time.