

Abstract

We have observed field biologists perform research work while in the field, and have noticed several key aspects. In short, biologists generally:

- use paper notebooks to enter data and observations
- capture many types of data
- do not have free hands to operate extra equipment (such as tablet computers)
- may hike long distances
- have more time to operate computers back at the lab

These aspects of field biology research point toward a tool that helps biologists capture and organize their field data. We aim to provide an organizing tool for field biologists. This tool will be centered about a notebook metaphor, and will provide novel features, such as correlation of notes and photographs. The first iterations will not require added field equipment; but instead, the traditional pen and paper notebook will be replaced with an Anoto digital notebook system. We will target the prototype for a biologist's lab computer.

Task Analysis

Task 1:

Given a page of notes, find a related photo. Currently, such a task is difficult because photos are uploaded to the file system, while notes remain in physical form. No link is maintained between a page of notes that were written, and a photo that was taken at the same time. With our system, the link is maintained automatically, by correlating timestamps. This task is reduced to: 1) finding the page of notes, and 2) browsing the temporally related photos displayed by the system.

Task 2:

Task 1, backwards. Given a photo, find any notes that may have been written about that photo. The system provides this "focus flipping," where the user can choose between a note-centric and photo-centric view.

Ideation

See the attached figures.

Evidence

We have spoken with biologists (J Stamberger and R Dirzo) about preliminary ideas for this system. They have provided promising reactions, saying that such a system would be useful for them. Hopefully, this will be reinforced once we get a demo running.

Further Evidence

We will get further evidence to support our claims once our prototypes are working. We will videotape 30-minute usability sessions, where the tasks are not specified. The user

will be allowed to explore the user interface, and provide comments via a questionnaire and debriefing interview.

Evaluation Plan

Once the first prototype is complete, biologists will be sought out to try out and give comments regarding the tool. A second prototype will be developed based on their comments on the usefulness of the first design.

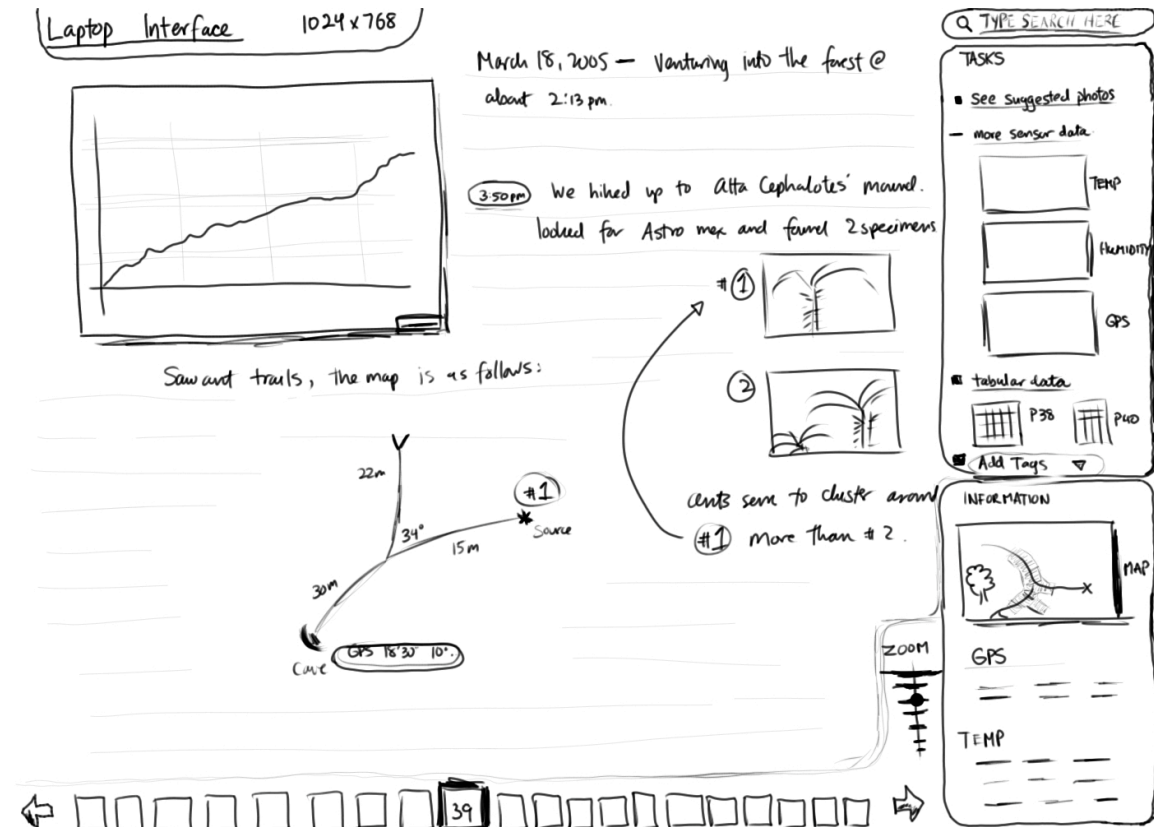


Figure 1. A zoomed in notebook page with a navigation tray on the bottom, and task pane on the right.

Photos
← Last View

MARCH 28, 2005

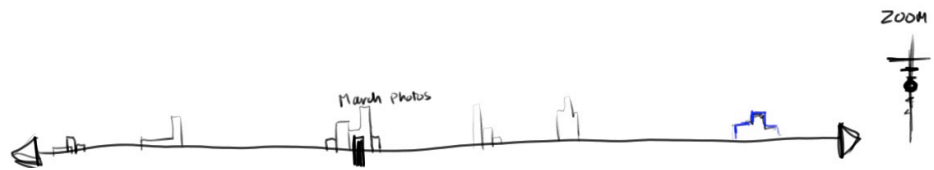


Figure 2. A mid-level zoomed view of photographs, with thumbnails of related sensor readings and notebook pages. The navigation tool on the bottom shows a timeline of photos.

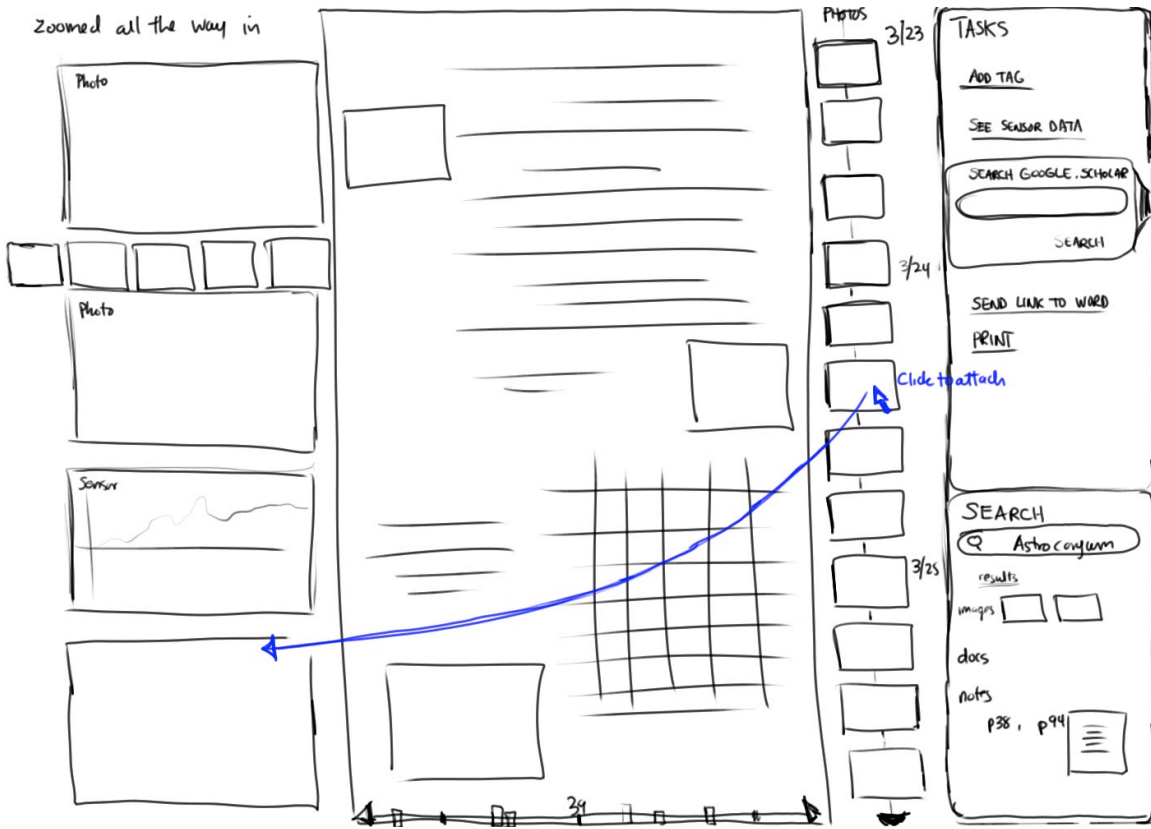


Figure 4. A zoomed-in view showing one page of notes, with related photographs, and the task pane.