

Letter from the Director

Thanks to the web, the geospatial field, once dominated by complex desktop software, has rapidly shifted to a more flexible and open online format. The time we previously spent gaining expertise in a particular application can now be better spent digging deeper into the information and research questions we aim to understand.

The advantages of this shift extend to a wide range of users. The general public now has access to a wealth of primary data that they can use to learn about the issues that are important to them. Researchers are able to quickly share the valuable information that they have curated to a wider audience. And experts can take advantage of an amazing amount of resources available for analysis within a web application, without the need to work within the confines of a personal workstation.

The GIF is responding to the overwhelming technological shift by applying them to the environmental and social challenges that engage our community. This newsletter highlights a few of the ways that we are doing this, and some new services that make it easy to get involved, including:

- An informatics engine that promises to unify the tremendous amount of species and field data collected by the UC Berkeley museums with openly available environmental data;
- A web application to share the results of a USGS land cover assessment; and
- Information about ArcGIS Online and CartoDB, great resources to help you publish map data.

As the geospatial field continues to evolve, we look forward to providing more resources that will help sustain the brilliant research abound at Cal and beyond!

- Kevin Koy

Informatics Engine

Understanding Biotic Response to Global Change

In collaboration with the Berkeley Natural History Museums, the GIF has been awarded a grant from the W. M. Keck Foundation to develop a research and collaboration tool that will unify the UC's vast specimen and field station data with environmental layers. The project is a part of the Berkeley Initiative in Global Change Biology (BiGCB).



The Predictive Biosystems Informatics Engine (PBIE) will consist of three components:

- A collection database, which will serve data from museum collections, field stations, and faculty labs.
- A baselayer database that will serve geospatial data on observed or modeled climates, environmental parameters, species ranges, vegetation cover, etc.
- An intuitive user interface that will enable rapid access, visualization, and analysis of the data.

GIF developers Falk Schuetzenmeister and Brian Galey are building the application with the help of Shuffei Lei, GSR.

To learn more about the project, visit:
<http://ib.berkeley.edu/labs/globalchange/>

USGS LandCarbon

Data Access and Visualization

GIF Staff are working with colleagues in the USGS to develop a web application to deliver and allow visualization of data from the LandCarbon program.

LandCarbon is a national assessment focusing on two interrelated objectives: 1) implementation of the 2007 Energy Independence and Security Act, Section 712; and 2) improved understanding of carbon sequestration and greenhouse gas fluxes in and out of ecosystems related to land use, using scientific capabilities from USGS and other organizations.

The assessment covers all major terrestrial and aquatic ecosystems, is conducted for all fifty states, provides estimates of baseline as well as future potential carbon

storage and greenhouse gas fluxes, and conducts analysis of effects of major natural and anthropogenic processes that impact ecosystem carbon storage and greenhouse gas fluxes. Major natural and anthropogenic processes include climate change, wildfire, land use change, and land management activities.

The site will include access to a robust suite of data layers derived by the USGS project in a variety of formats. There will also be map based visualization tools allowing users to quickly explore the data throughout the US. Stay tuned for a public launch later this Fall.

Web Maps

New services available for students

There are several great options now available that allow you to easily build and publish webmaps, without the need for access to your own server. Two great options that each have a lot of interesting features are ArcGIS Online and CartoDB.

ArcGIS Online

ESRI's arcgis online interface includes access to a number of data layers that are already hosted within the platform. Users can easily create and share maps within groups, or to the general public, with only a web browser. With the new "ArcGIS Online for Organizations" system, users can now take advantage of ESRI's cloud based hosting.

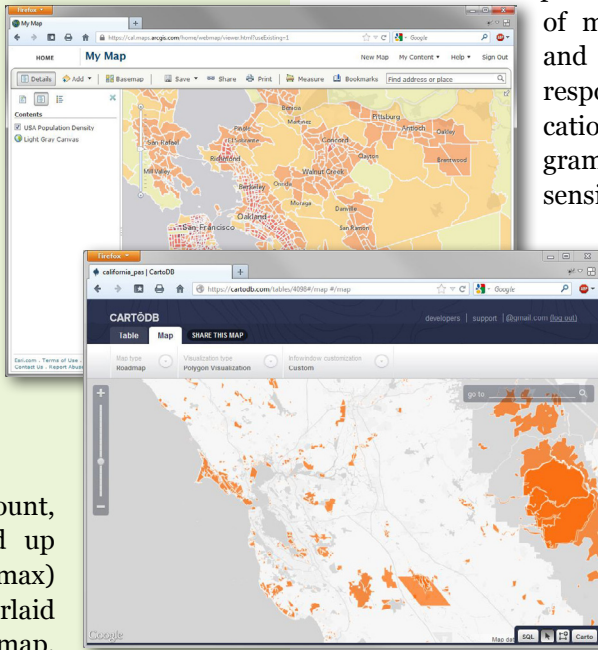
UC Berkeley has a limited number of free user accounts available for "ArcGIS Online for Organizations." To register for an account, email Kevin at kkoy@berkeley.edu.

CartoDB

Developed by Vizzuality, CartoDB is an excellent web application platform built on free and open source software.

With a free account, users can upload up to 5 tables (5 mb max) that can be overlaid on a custom webmap. The easy to use interface then allows you to customize the look and feel of the map, and share your results.

Data that can be uploaded includes shapefiles and kml. Visit <http://cartodb.com> to give it a try.



Networking Opportunities

BAAMA

The Bay Area Automated Mapping Association (BAAMA) is a great local network for geospatial professionals from a variety of different fields. The GIF has purchased an "Educational Membership" which gives us the ability to freely add an unlimited number of UC Berkeley students, faculty, and staff.

If you would like to become a BAAMA member, send an email to Kevin (kkoy@berkeley.edu) with the subject "BAAMA Membership" and include the name and email address that you would like associated with your membership.

ASPRS

The American Society for Photogrammetry and Remote Sensing (ASPRS) is a national professional organization that aims to advance knowledge and improve understanding

of mapping sciences and to promote the responsible applications of photogrammetry, remote sensing, geographic information systems (GIS), and supporting technologies. Find out more about the Nor-Cal region at (<http://www.asprs.org/a/norcal/>).

Scholarships

Both BAAMA and ASPRS award annual scholarships to students actively engaged in geospatial research. Keep an eye out this term for upcoming announcements and application details.

Upcoming Events

Workshops & Seminars

The Fall 2012 workshop agenda is now available at: <http://gif.berkeley.edu>. Geospatial courses being offered include:

- Intro to GIS, GPS, Remote Sensing
- Land cover change analysis
- Object Based Image Analysis
- Intro to Open-Source GIS
- Intro to WebGIS
- Intro to Species Modeling

GeoLunch

Thursday's 1:10 - 2PM

We will be hosting great speakers for this term's GeoLunch seminar series. Come join us in Mulford 103. Presentation details are available at:

<http://gif.berkeley.edu/about/geolunch.html>

GIS Day

GIS Day is Wednesday, November 14. Stay tuned for details on the upcoming events!

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