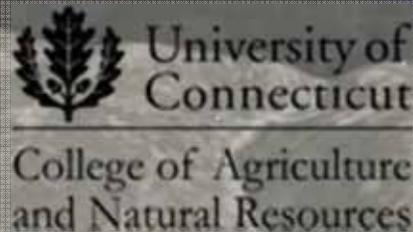


Free Google Tools for Creating Interactive Mapping “Mashups”

**Cary Chadwick
Emily Wilson**

**Tuesday, May 10, 2011
2pm**



Welcome to the CLEAR Webinar Series!

This is the fourth in the 2011 series

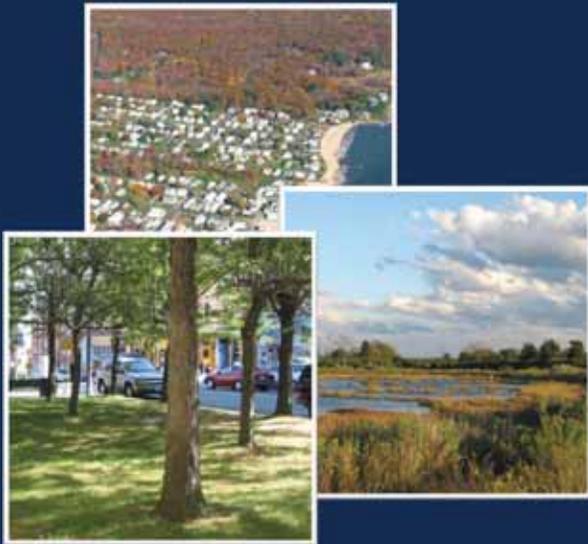
- Riparian Corridors, Now Online
- Affordable Housing, Now Online
- Rain Gardens, Now Online
- **Google Maps Mashups, May 10**
- **Brownfields, June 14**
- **GPS & Smartphone Mapping, July 19**
- **Permeable Pavements for Stormwater Control, September 13**
- **Farm-friendly Plans and Regulations, October 18**
- **CLEAR Web Tools, November 8**

Register Now!
<http://clear.uconn.edu>

Suggestions? Email clear@uconn.edu

Center for Land Use Education and Research

CLEAR's Mission:
To provide information,
education and assistance
to **land use decision
makers** in support of
balancing growth and
natural resource
protection.



University of Connecticut

- College of Agriculture, Dept. of Extension
- College of Agriculture, Dept. of Natural Resources
- Connecticut Sea Grant

CLEAR Programs

- Connecticut NEMO
- National NEMO Network
- Geospatial Training Program
- Land Use Academy
- Extension Forestry Program
- Lab for Earth Resource Information Systems
- Green Valley Institute



CLEAR's Geospatial Training Program

Hands-on Short Courses in Geospatial Technologies:

- ❖ Geographic Information System (GIS)
- ❖ Global Positioning System (GPS)
- ❖ "Earth browser" trainings (Google Maps, Google Earth)

Mashup Training!

May 24th
Middlesex County
Extension Center
Haddam, CT



<http://clear.uconn.edu/geospatial>



Webinar Agenda

- 1. Who's, Where's and What's** 
- 2. Introduction to Web Mapping Mashups**
- 3. Techniques for Creating Interactive Web Maps**
 - **Google Maps My Maps**
 - **Google Fusion Tables**
 - **Google Earth**
 - **KML & the GIS User**
- 4. Techniques for sharing data and web maps**
- 5. Q& A and Helpful Resources**



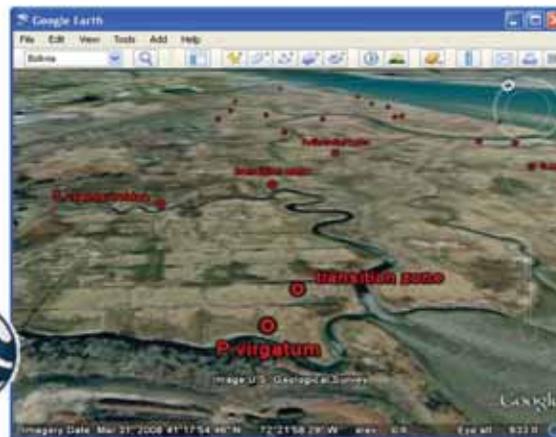
What is a Mashup Anyway?

Mashups combine separate, stand-alone technologies into a novel application, often functioning through an application programming interface (API) which facilitates communication between the technologies without modification of the source code.



DOMINANT SPECIES

- ◆ Spartina patens
- ◆ Phragmites australis
- ◆ Typha sp.
- ◆ Sedges
- ◆ Flotsam



The World's First Mapping Mashup

For Rent For Sale Rooms Sublets

Powered by [craigslist](#) and [Google Maps](#)

City: *** Choose a city *** Price: \$1500 - \$2000 Show Filters ^{New} Refresh [About / Feedback](#)



Map Satellite Hybrid

Drag the map with your mouse, or double-click to center.

Click on an  icon to select a city.

In each city, click on the  and  icons to see listings. You can also click the  and  icons next to each listing.

Yellow icons have pictures.

Set the price range using the drop-down menu above.

<http://housingmaps.com>

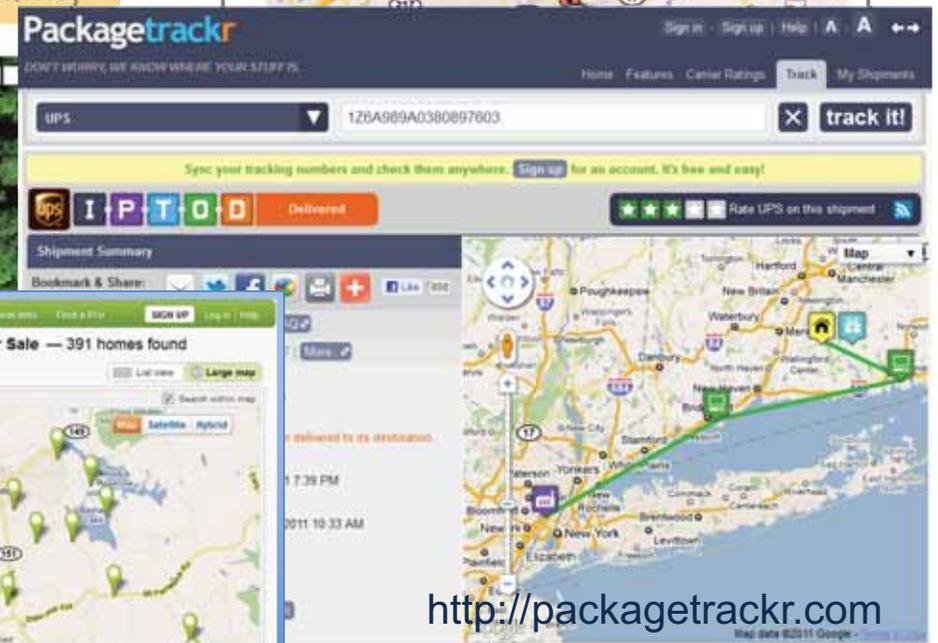


Examples of Mashups

<http://coffeeseeker.com>



Mashups Make Life Easier



<http://trulia.com>

<http://packagetrackr.com>

Examples of Mashups

Mashups Educate Us

National Low Impact Development (LID) Atlas

Filter Projects

- All Projects (644)
- Swale/Bioswale (110)
- Bioretention/Rain Garden (33)
- Cistern/Rain Barrel (2)
- Stormwater Wetlands (7)
- Green Roof (0)
- Permeable Pavement (105)
- Water Conservation (0)
- Green Streets (0)
- Other (0)

State: All States

Land Use Type: All Types

Currently Showing (644 Projects)

- Dennis L. Hansen's House, Duluth, MN
- 1750 gallon residential rain barrel by Duluth, MN
- Applebee's Bioretention, Superior, WI
- Arrowhead Electric Cooperative, Lutsen, MN
- Asbury United Methodist, Duluth, MN
- Bagley Nature Center Green Roof, Duluth, MN
- Best Western Bioretention pond Grand Marais, MN
- Clyde Avenue Boat Launch Bioswale, Duluth, MN
- Cook Co courthouse, Grand Marais, MN
- Cook County Check Dams, Grand Marais, MN
- Cook County Library Rain Garden, Grand Marais, MN
- Diamond Vogel Paint Store, Duluth, MN

Bioretention Cells - OSU Botanical Gardens

Project Summary: Two cells were constructed at the OSU Botanical grounds as part of continuing research of stormwater runoff.

Location: 3180-3380 W 8th Street, Stillwater, OK

LID Practice: Bioretention/Rain Garden

Land Use Type: Mixed Use

Construction Date: September 2008

Entered By: Oklahoma Cooperative Extension Service
<http://lid.okstate.edu>

Last updated on 2/11/11 10:31:40 by jzack@uconn.edu
This Web application is an educational initiative of the National HEMO

<http://clear.uconn.edu/tools/lidmap>

NOAA Marine Debris: Highlights

Marine Debris - An Orientation

Marine debris is one of the most widespread pollution problems facing the world's oceans and waterways. This pile of marine debris gathered from a beach in Japan shows typical debris types: food and drink containers, household trash derelict fishing gear, and boating refuse. In this voyage, you will learn about the problems marine debris causes and some solutions from around the globe. (Photo credit - NOAA/PAP)

<http://marinedebris.noaa.gov>



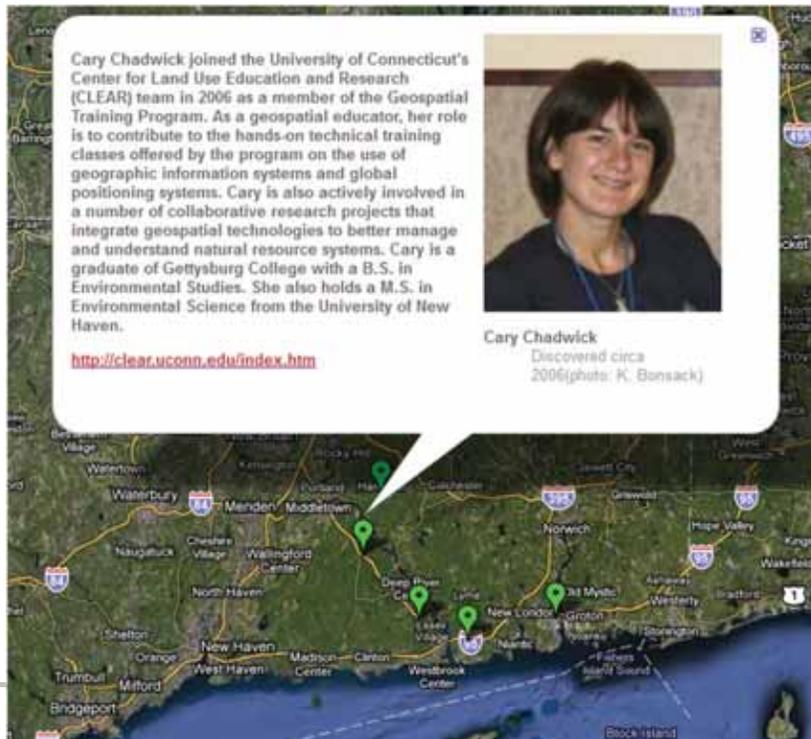
Surveying Your Mashup Experience

✓ **Poll Question 1:**
Have You Ever Used a Mashup?



Surveying Your Mashup Experience

✓ Poll Question 2: Have You Ever Created Your Own Mashup?



Cary Chadwick joined the University of Connecticut's Center for Land Use Education and Research (CLEAR) team in 2006 as a member of the Geospatial Training Program. As a geospatial educator, her role is to contribute to the hands-on technical training classes offered by the program on the use of geographic information systems and global positioning systems. Cary is also actively involved in a number of collaborative research projects that integrate geospatial technologies to better manage and understand natural resource systems. Cary is a graduate of Gettysburg College with a B.S. in Environmental Studies. She also holds a M.S. in Environmental Science from the University of New Haven.

<http://clear.uconn.edu/index.htm>

Cary Chadwick
Discovered circa 2006 (photo: K. Bonsack)



The Mashup Scale of Difficulty



**Rapid Mashup
Development Tools**

Basic Web Maps

**Customized Data
Layer Integration**

**Fully Customized
Web Maps**



Anyone can do it!

Trending Toward the Techies

Range of Techniques

Google Maps My Maps
Google Map Maker
Google Fusion Tables
MapBuilder
BatchGeo

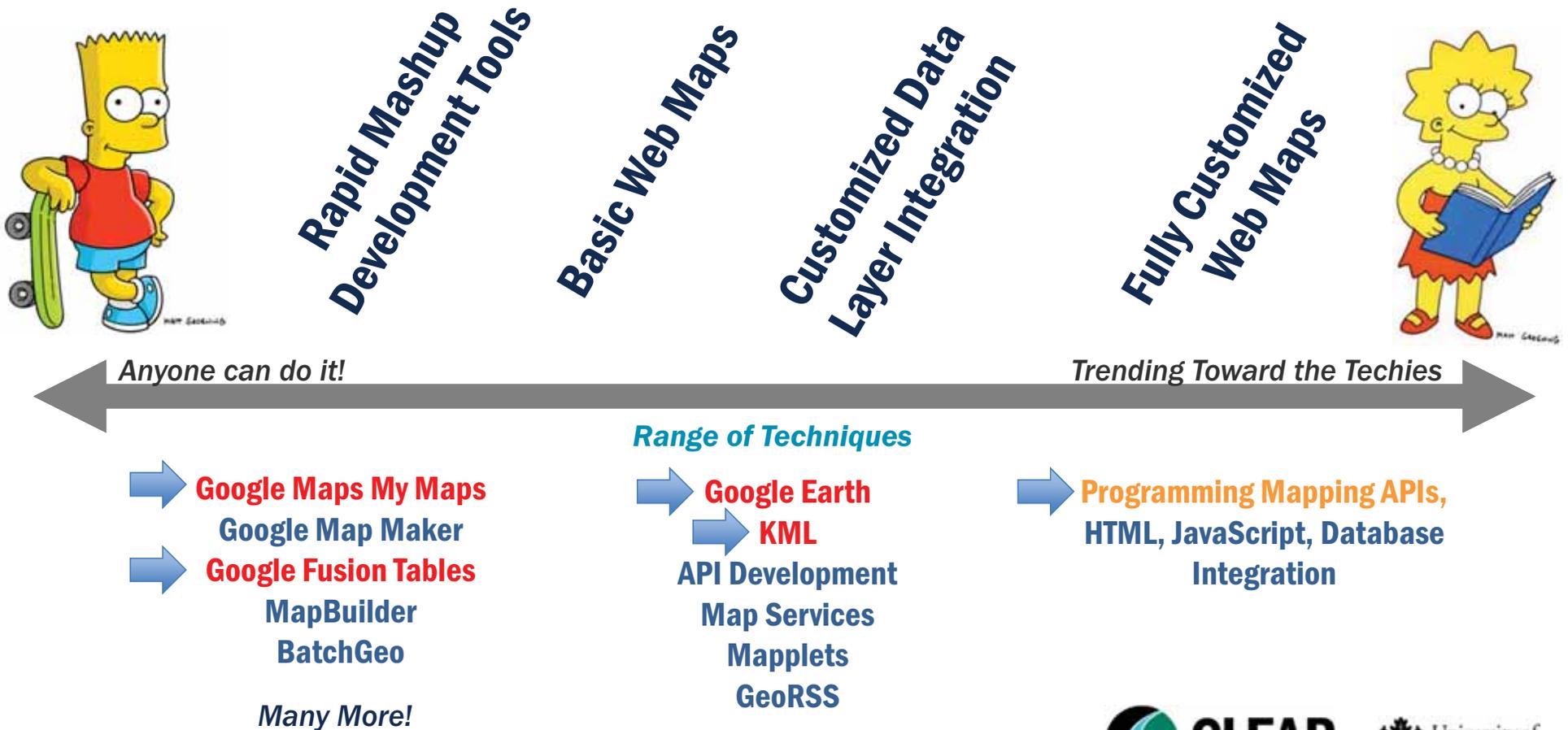
Many More!

Google Earth
KML
API Development
Map Services
Mapplets
GeoRSS

Programming Mapping APIs,
HTML, JavaScript, Database
Integration



The Mashup Scale of Difficulty

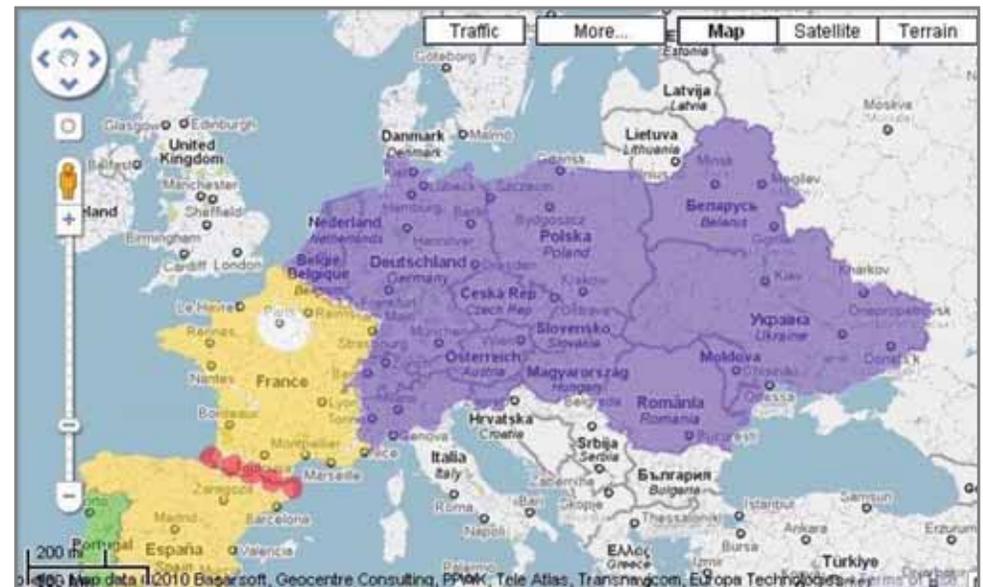


Why Use Google Tools?



Google, Who?

- ❖ Google Maps is ubiquitous
- ❖ Google Maps is intuitive
- ❖ Google Maps is flexible
- ❖ Google Maps is resourceful
- ❖ Google Earth is pretty cool.



Micky Hulse

Google Earth Vs. Google Maps

Google Earth

- 3D Globe
- Shows polar regions
- No login require to create files

➤ Can create KML and KMZ, import data from GPS receiver

➤ Google Sky, Moon, Mars and Ocean

➤ Wow factor? ★★★★★

<http://earth.google.com/>



Google Maps

- 2D Map (3D with Plug-in)
- Does not include polar regions

➤ Wow factor? ★★★★★

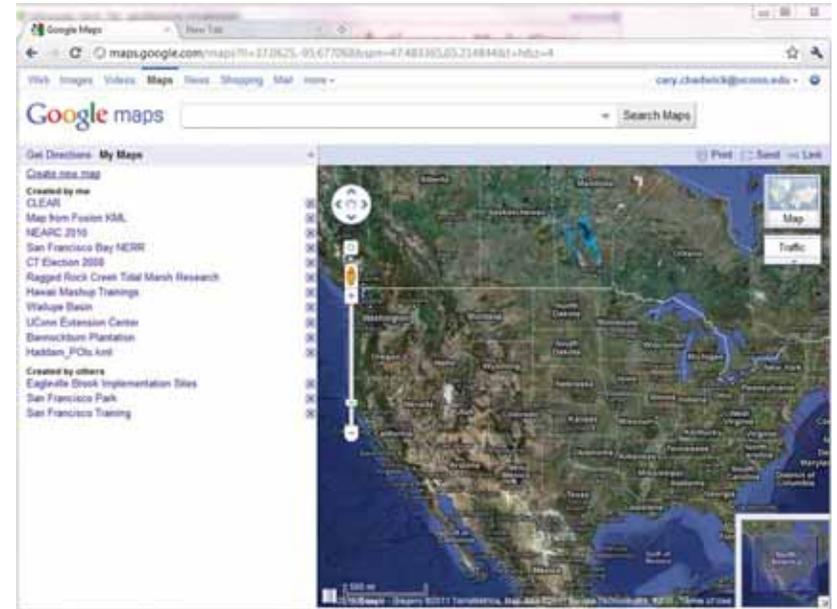
<http://maps.google.com/>



Google Maps My Maps



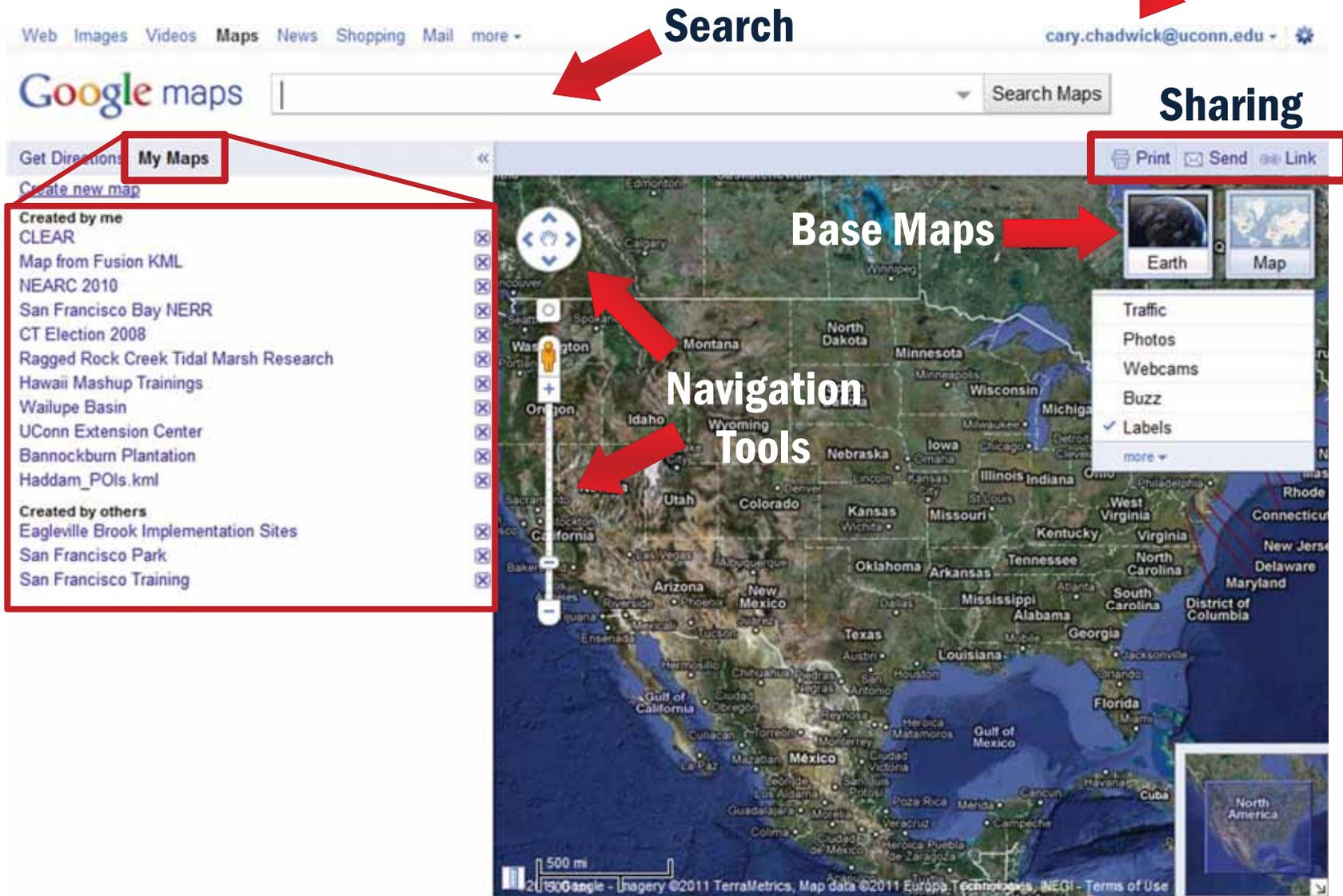
<http://maps.google.com>



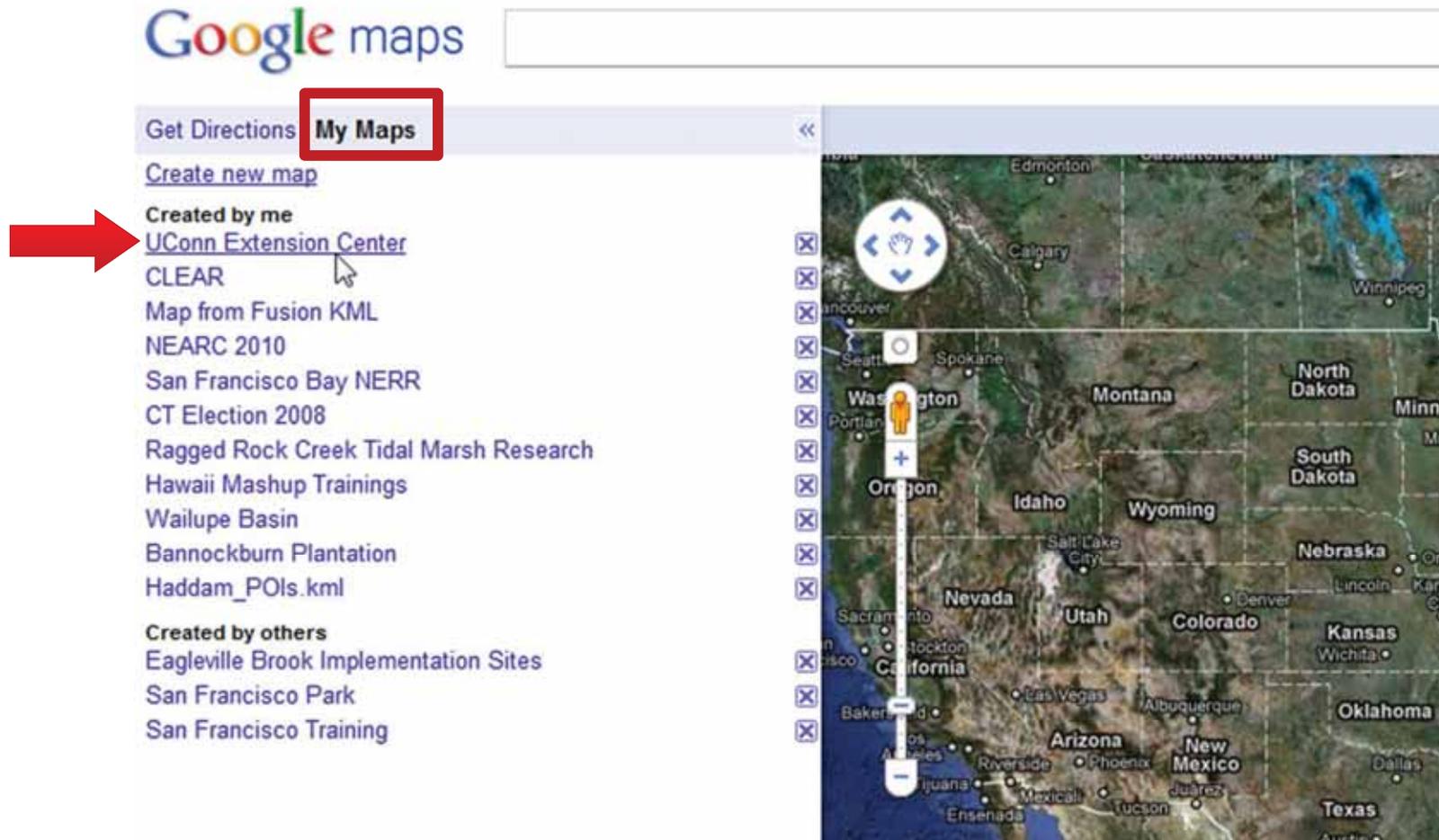
- **My Maps is embedded in Google Maps**
- **Free method for personalizing Google Maps**
- **WYSIWYG editor**
- **Allows a user to add data, import KML**
- **Create customized popup windows using plain text, rich text and HTML**
- **Add photos, videos and hyperlinks within information bubbles**
- **Collaborate with other map editors, email URL link to your Google Map, embed in website or blog**

Google Maps My Maps Interface

Sign In



Google Maps My Maps Edit Mode



Google Maps My Maps Edit Mode



The screenshot shows the Google Maps My Maps interface in edit mode. On the left, a sidebar lists several locations with yellow pins: UConn Extension Center, Haddam Meadows State Park, Thankful Arnold House, Field Park, and Higganum Green. The 'UConn Extension Center' entry is highlighted with a red arrow. The main map area shows a satellite view of the Connecticut River region with several yellow pins placed along the riverbank. A red box highlights the 'Edit' button in the top left corner of the map area. The top navigation bar includes 'Get Directions', 'My Maps', 'View in Google Earth', 'Print', 'Send', and 'Link'.



Google Maps My Maps Edit Mode

The screenshot displays the Google Maps My Maps Edit Mode interface. The main map area shows a satellite view of Haddam, Connecticut, with several yellow pushpins marking specific locations. A red arrow points to the 'Edit' icon (a hand with a pencil) in the top toolbar. The left sidebar contains the following information:

- Title:** UConn Extension Center
- Description:** This is CLEAR's home base.
- Privacy and sharing settings:** Public - Shared with everyone. This map will be published in search results and user profiles.
- UConn Extension Center:** 1066 Saybrook Road Haddam, CT 06438 Home to the Center for Land Use Education and Research
- Haddam Meadows State Park:** Haddam Meadows is a Connecticut State Park located in the town of Haddam on the banks of the Connecticut River. <http://www.ct.gov/Dep/cwp/view.asp?A=2716&Q=325206>
- Thankful Arnold House:** The Thankful Arnold House is a historic house museum that dates back to the late 18th century. http://www.haddamhistory.org/arnold_house.htm
- Field Desk:**

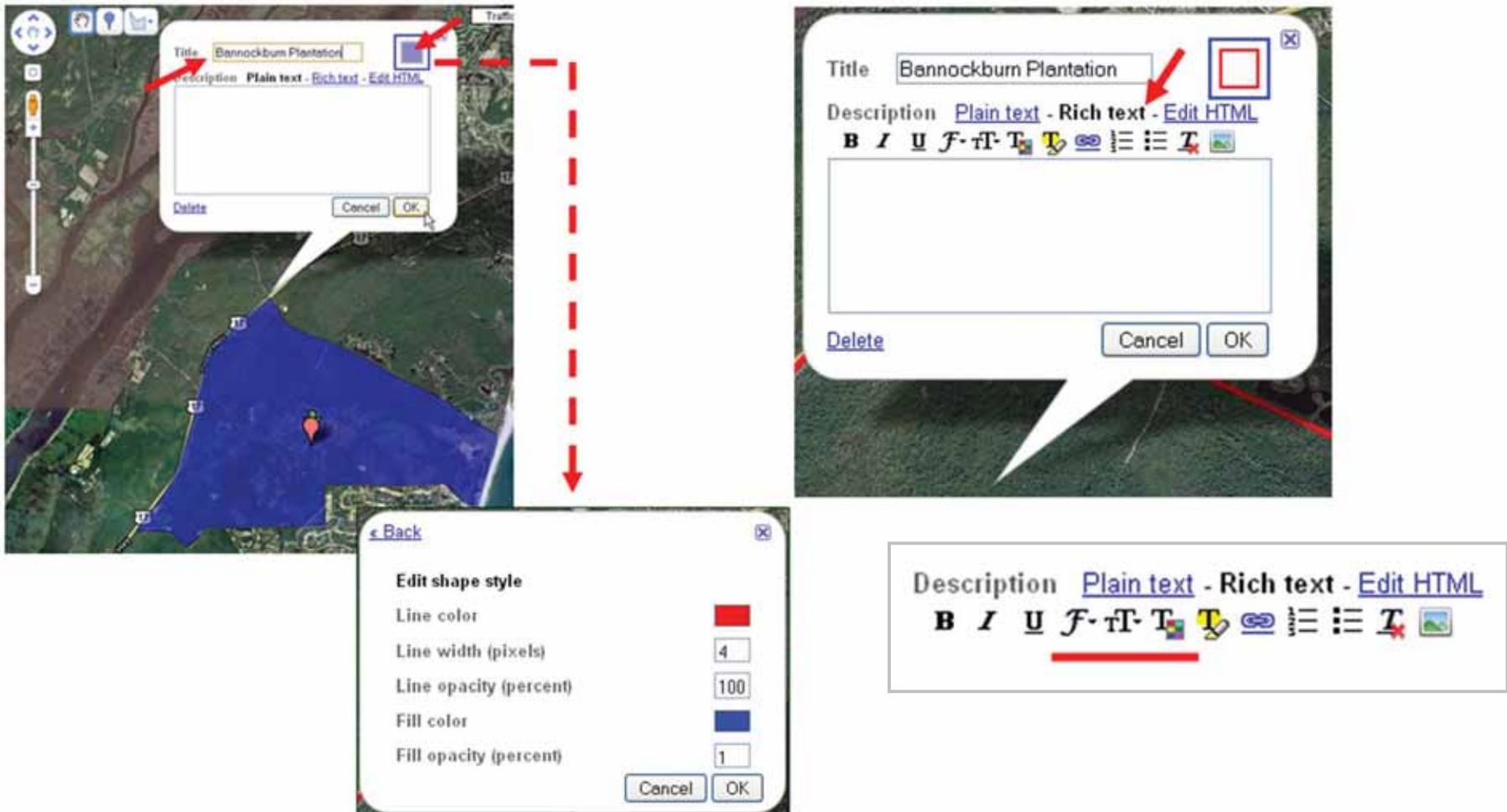
The map also shows the 'Town of Haddam', 'Haddam Island State Park', and 'Haddam Meadows State Park'. The bottom of the map includes a scale bar (1 mile) and a 'Report a problem' link.



Adding Features to a My Map

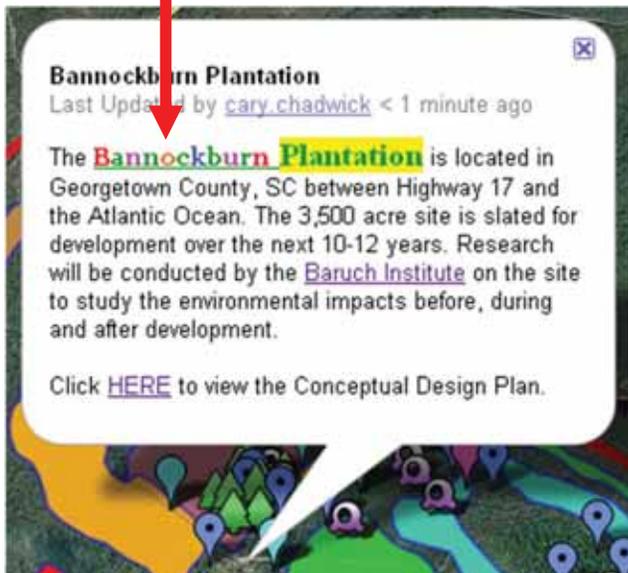
The image shows a screenshot of the Google Maps My Maps interface. On the left, the 'My Maps' sidebar is visible, with the 'Import' link highlighted by a red arrow and the text 'Import Data'. Below this, there are sections for 'Title' (set to 'Demo'), 'Description', 'Privacy and sharing settings' (set to 'Public'), and a list of drawing tools: 'Placemark', 'Line', 'Line Along Roads', and 'Shape'. At the bottom left, a dropdown menu is open, showing three options: 'Draw a line', 'Draw a line along roads', and 'Draw a shape'. On the right, a map of a residential area is shown with several features: a blue line drawn across the map, a red line following the path of roads, a blue placemark, and a yellow shaded area representing a shape. Red arrows point from the text labels 'Line', 'Line along roads', 'Placemark', and 'Shape' to their respective features on the map.

Editing a Feature

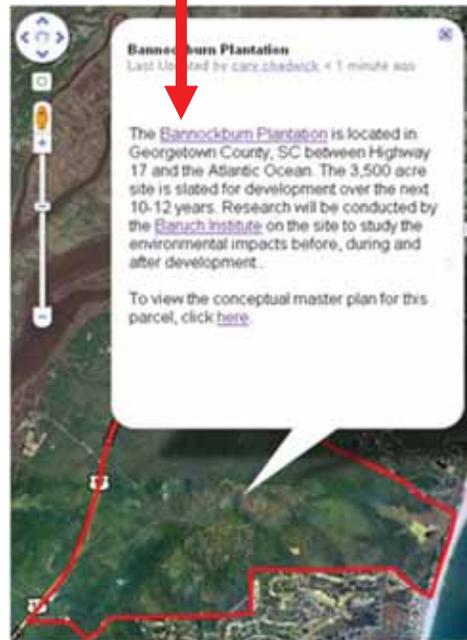


Using the Rich Text Format

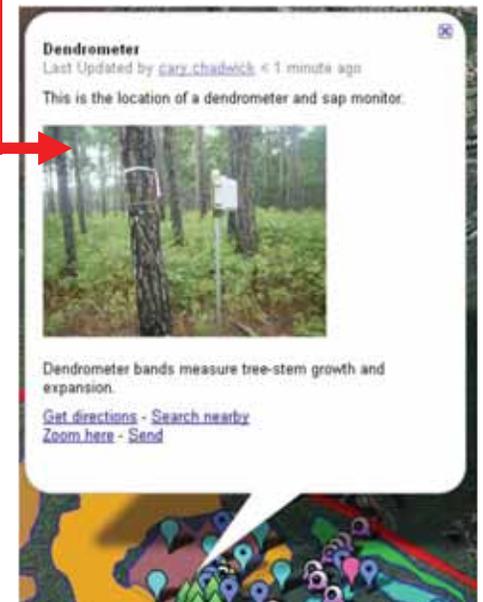
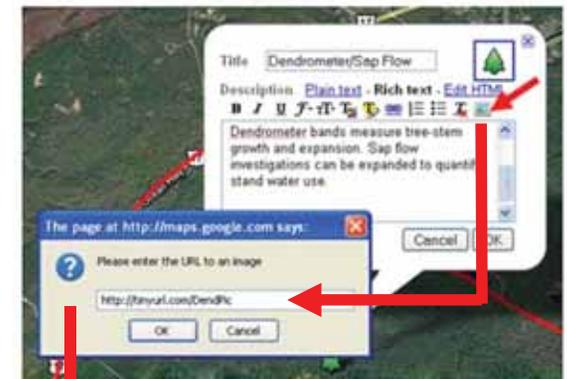
Format Text



Insert Hyperlinks



Embed Photographs

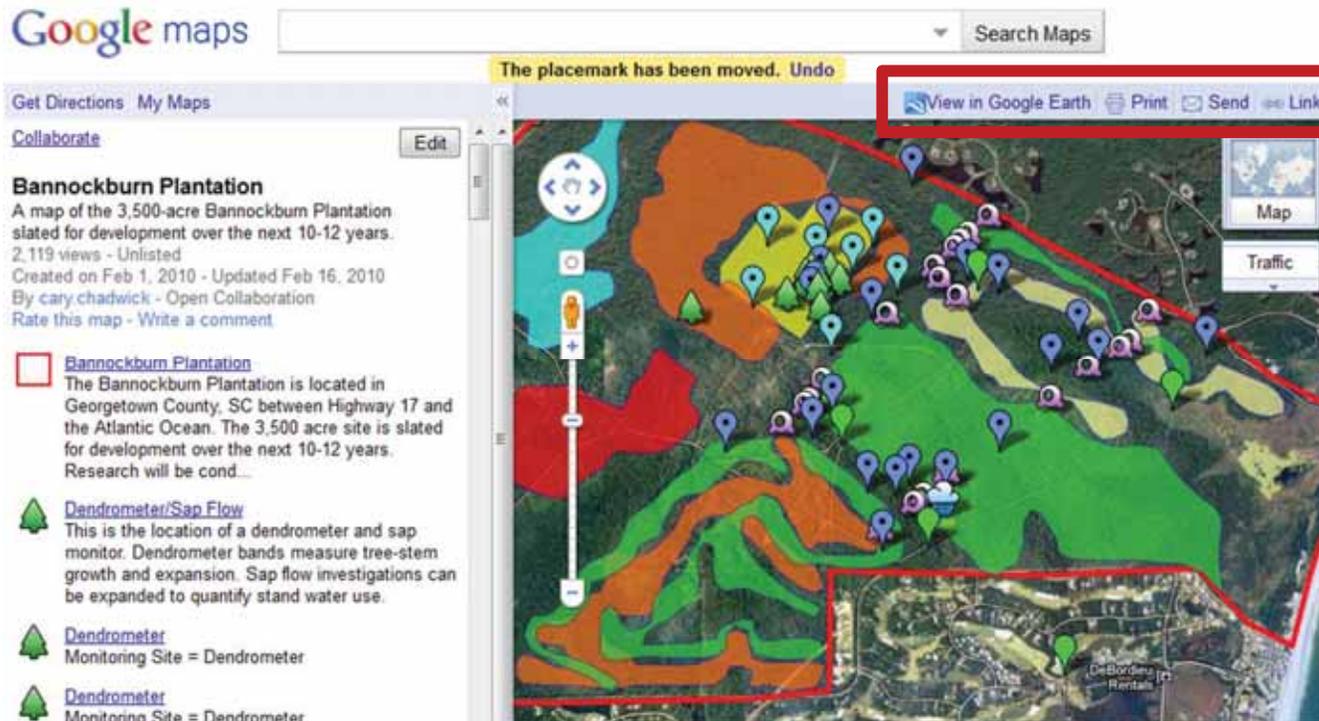


Sharing and Collaborating

The screenshot shows the Google Maps interface for a shared map titled "Bannockburn Plantation". A red arrow points to the "Collaborate" button in the top-left navigation bar. The map displays various colored regions and several location pins. A dialog box titled "Invite collaborators" is open, showing the email address "emily.wilson@uconn.edu" and a message: "I've shared a map with you called Bannockburn Plantation: http://maps.google.com/maps/ms?ie=UTF&m... 217144437669302733049.00047e8dbb8406608c3c4". The dialog also includes a "Send invitations" button and a checked option "Send me a copy of this invitation". To the right of the dialog is a "Manage collaborators" panel showing "Collaborators (1) - remove all" and "Me - owner".



Sharing and Collaborating



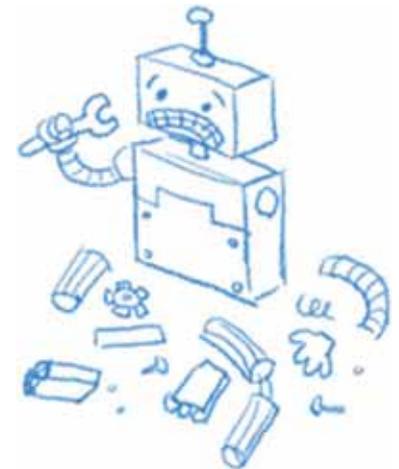
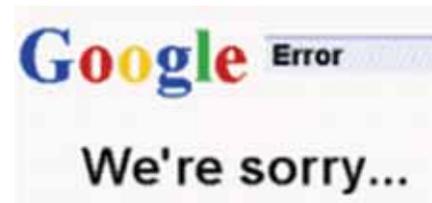
KML
Print Map
Email
URL Link
Embed HTML

Live Demo



Google Maps My Maps Limitations

- ❖ You are limited to 1000 map features
- ❖ Maximum KML import = 10 MB
- ❖ All collaborators must have a Google Account
- ❖ Customization is somewhat limited
- ❖ Data is stored on Google servers
- ❖ Google-centric



Google Maps My Maps Q&A

© Original Artist
Reproduction rights obtainable from
www.CartoonStock.com



search ID: mbcn1605

"Franklin's waiting for the Google 'Street View' camera car to drive by so he can moon it."

Google Fusion Tables



Fusion Table Basics:

- ❖ **Just graduated from Google Labs**
- ❖ **Cloud-based application**
- ❖ **Designed for data management and collaboration**
- ❖ **Offers data visualization tools including ability to map data in Google Maps and access HTML code to embed on third party websites**
- ❖ **Supports .csv, .xls, .xlsx, .ods, Google spreadsheets, .KML files**
- ❖ **Quota of up to 250 MB per user (shared tables not included)**



Google Fusion Tables

Google fusion tables fusiontest.xls Cary Chadwick

File View Edit **Visualize** Merge

Current view: All - [Show options](#)

1 - 7 of 7

Interact, Share, Embed [Discussions \(1\)](#) [Get link](#) [Share](#) [Share \(new\)](#)

Lat	Long	Name	Description	Discovered	pic	link	
41.351667	-72.416111	Chet Arnold	Chester Arnold is a Water Quality Educator for the...	Discovered circa 1987		http://clear.uconn.edu/index.htm	
41.568056	-72.505556	Emily Wilson	Emily Wilson is the Geospatial Technology Speciali...	Discovered circa 2000		http://clear.uconn.edu/index.htm	
41.686944	-72.544722	Dave Dickson	Dave Dickson is the coordinator of the National NE...	Discovered circa 2004		http://clear.uconn.edu/index.htm	
41.466111	-72.544167	Cary Chadwick	Cary Chadwick joined the University of Connecticut...	Discovered circa 2006		http://clear.uconn.edu/index.htm	
41.355556	-72.099444	Bruce Hyde	Bruce Hyde is a Land Use Educator for the Universi...	Discovered circa 2010		http://clear.uconn.edu/index.htm	
41.317222	-72.303056	Kara Bonsack	As the NEMO National Network Communicator, Kara Bo...	Discovered circa 2001		http://clear.uconn.edu/index.htm	
41.886389	-72.173056	Mike Dietz	Mike is a water resources educator, with primary r...	Discovered circa 2010		http://clear.uconn.edu/index.htm	

Geographic Properties

Additional Information

“Name” “Description”
 “Discovered”
 “Pic” – URL to photograph
 “Link” – URL to web link

Comments

Google Fusion Tables

The screenshot displays the Google Fusion Tables web application. At the top, the user is identified as Cary Chadwick (cary.chadwick@uconn.edu) with links for Tour, Feedback, My Account, Help, and Sign out. The main title is "Google fusion tables fusiontest.xls Cary Chadwick". A menu bar includes File, View, Edit, Visualize, and Merge, with "Visualize" circled in red. Below the menu, the current view is set to "All" with a "show options" link. The interface includes a location dropdown set to "Lat", a "Display as heat map" checkbox, and links for "Configure info window", "Configure styles", "Export to KML", "Get KML network link", and "Get embeddable link". The map shows Connecticut with several green pins. A pop-up window is open over a pin near Danbury, containing a photo of Emily Wilson and a text block.

Emily Wilson is the Geospatial Technology Specialist for the NEMO program. Since joining UConn in 2000, her role has been to provide GIS remote sensing information and support to the NEMO project, the Geospatial Training program and other related research and outreach efforts. She also does a significant amount of web work with the goal of providing easy access to geospatial information and maps. Emily is a graduate of Connecticut College with a BA in environmental science and botany. She received her M.S. in forestry and remote sensing from the University of Maine.

<http://clear.uconn.edu/index.htm>

Emily Wilson
Discovered circa 2000(photo: K. Bönsack)

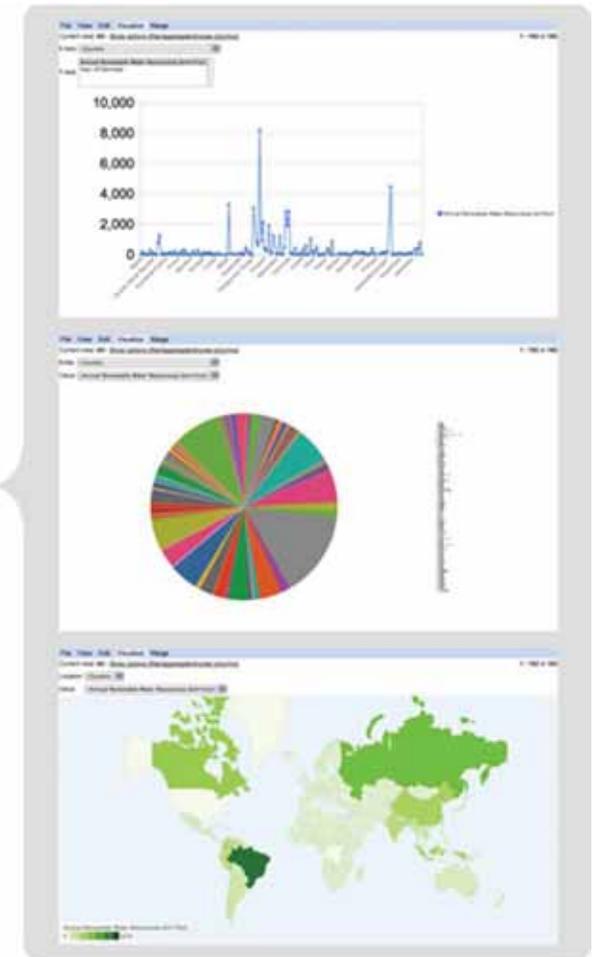
Additional Fusion Table Functions

- ❖ Supports embeddable charts, graphs, maps, and timelines
- ❖ Configurable map styles and information windows
- ❖ Supports data filters and basic queries
- ❖ Data attribution and protection capabilities
- ❖ Integration of data from multiple sources or users
- ❖ Export to KML for sharing or viewing in Google Earth
- ❖ Embed map or access as a KML network link
- ❖ Public (searchable, embedded), Private or Collaborative Databases

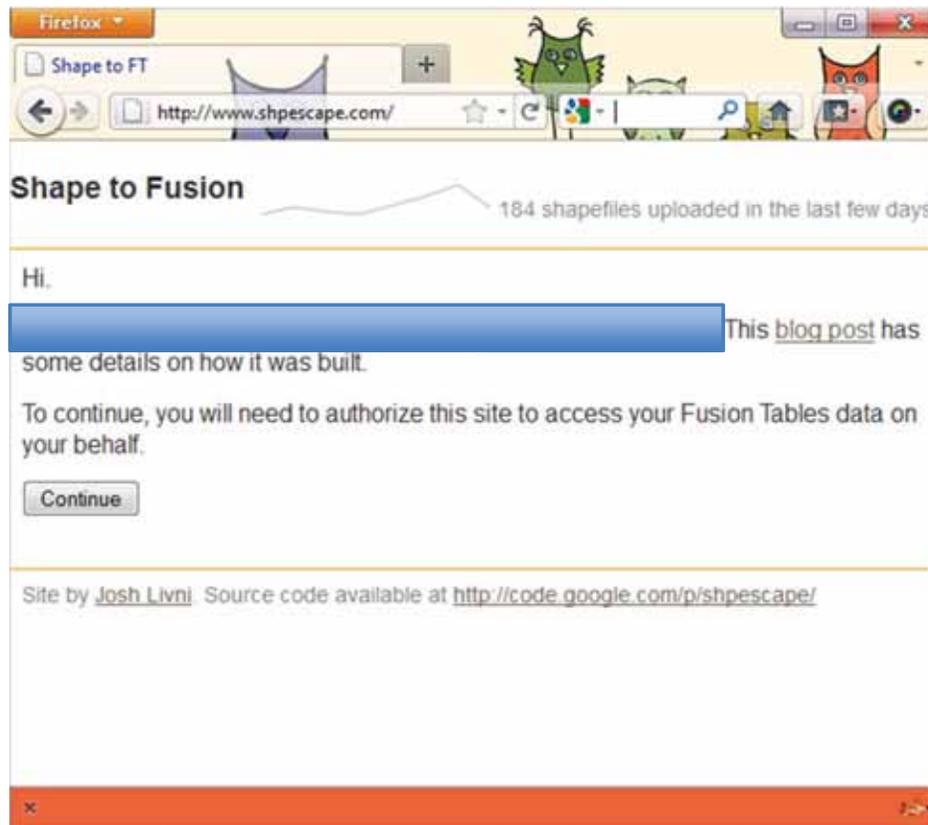
www.google.com/fusiontables

The screenshot shows a Fusion Table interface with a table titled "Total Renewable Freshwater Supply, by Country (2006 Update)". The table has columns for Country, Total Renewable Freshwater Supply, Year of Estimate, and Location. The data is sorted by Total Renewable Freshwater Supply in descending order.

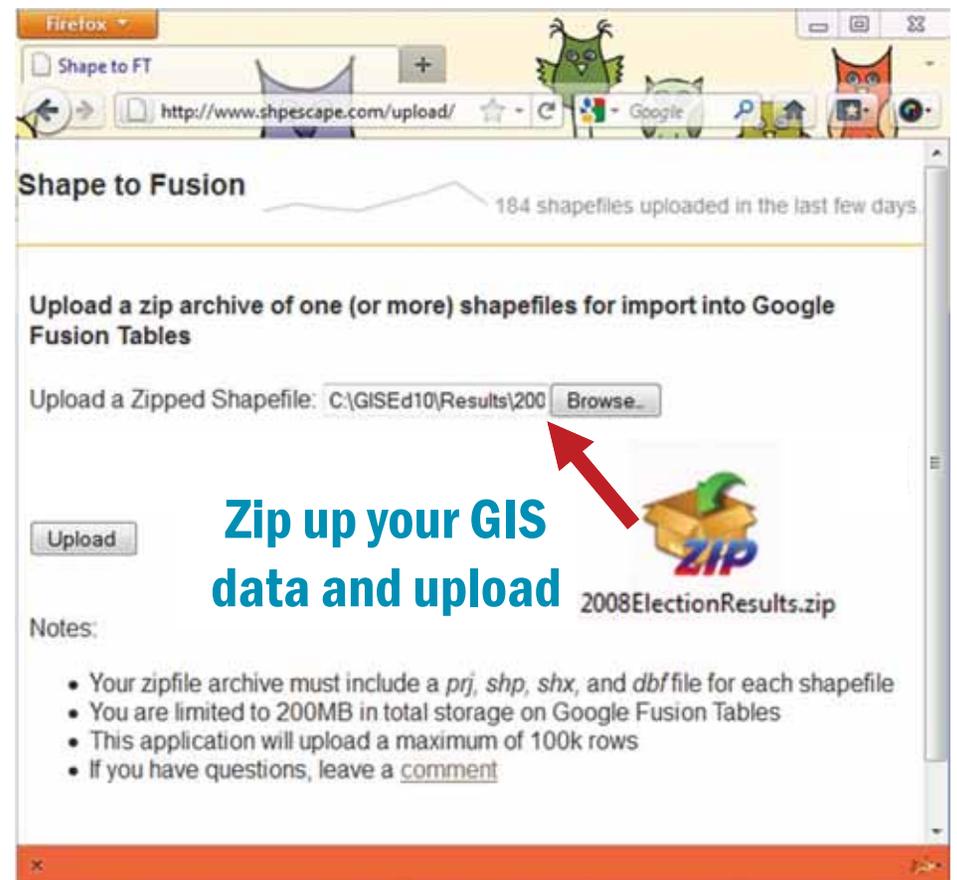
Country	Total Renewable Freshwater Supply	Year of Estimate	Location
Canada	14.0	1987	Canada from Statistics Canada
Algeria	10.0	1987	Algeria from Statistics Canada
Spain	10.0	1987	Spain from Statistics Canada
Belgium	10.0	1987	Belgium from Statistics Canada
Austria	10.0	1987	Austria from Statistics Canada
Switzerland	10.0	1987	Switzerland from Statistics Canada
Denmark	10.0	1987	Denmark from Statistics Canada
United States	10.0	1987	United States from Statistics Canada
France	10.0	1987	France from Statistics Canada
Germany	10.0	1987	Germany from Statistics Canada
Italy	10.0	1987	Italy from Statistics Canada
Japan	10.0	1987	Japan from Statistics Canada
South Korea	10.0	1987	South Korea from Statistics Canada
China	10.0	1987	China from Statistics Canada
India	10.0	1987	India from Statistics Canada
United Kingdom	10.0	1987	United Kingdom from Statistics Canada
Sweden	10.0	1987	Sweden from Statistics Canada
Norway	10.0	1987	Norway from Statistics Canada
Finland	10.0	1987	Finland from Statistics Canada
Denmark	10.0	1987	Denmark from Statistics Canada
Canada	10.0	1987	Canada from Statistics Canada



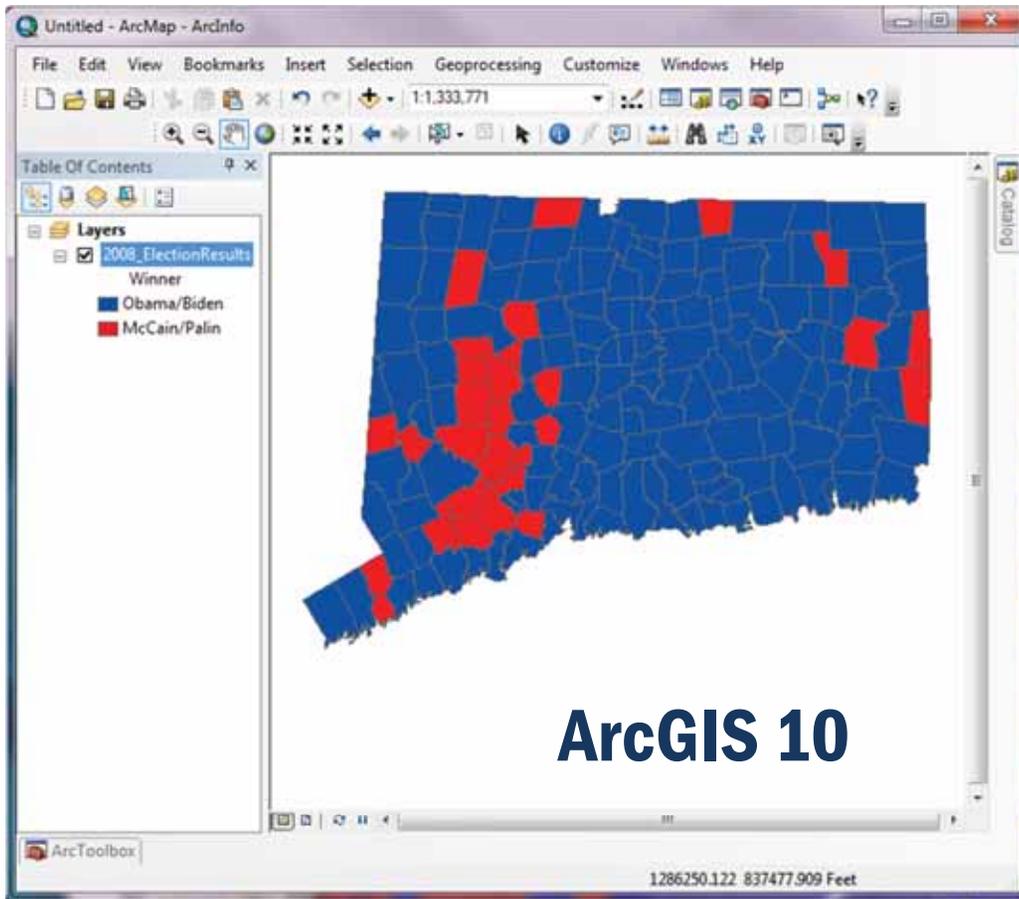
Google Fusion Tables for GIS Users



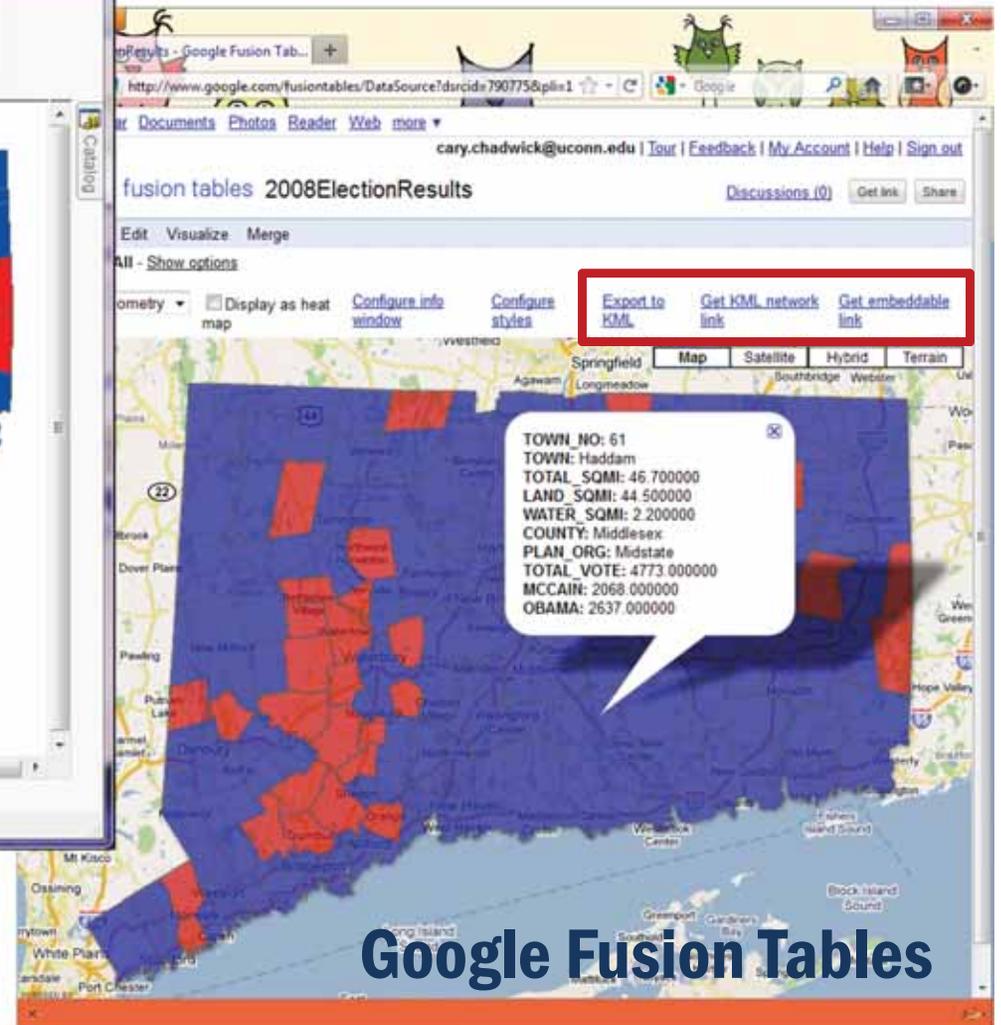
<http://shpescape.com>



Google Fusion Tables for GIS Users



<http://shpescape.com>



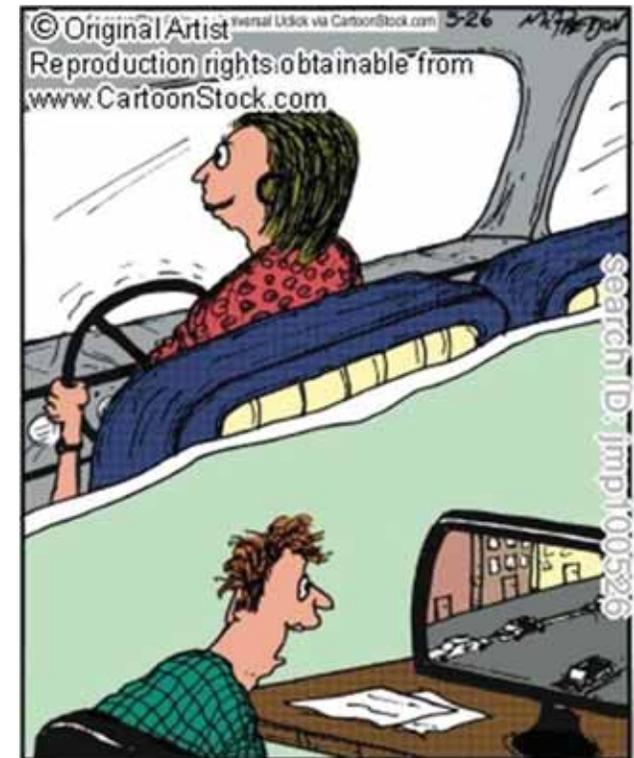
Google Fusion Tables Q & A



Google Earth

- **Desktop Application**
- **3D Globe**
- **Shows polar regions**
- **No login require to create files**
- **Requires knowledge of HTML to customize features**
- **Can create KML and KMZ**
- **Can import GPS data directly from receiver**
- **Auxiliary data layers including historical imagery**
- **Google Sky, Moon, Mars and Ocean**
- **Wow factor?** ★★★★★

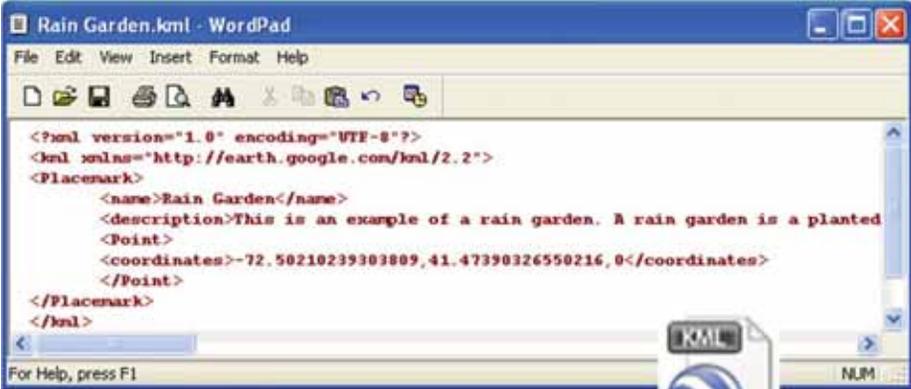
<http://earth.google.com/>



"OK, hon, I'm on Google Earth now...I see a parking spot! It's on Amsterdam, between 67th and 68th, left side!"

Surveying Your Mashup Experience

✓ Poll Question 3: Do You Know How to Create KML?

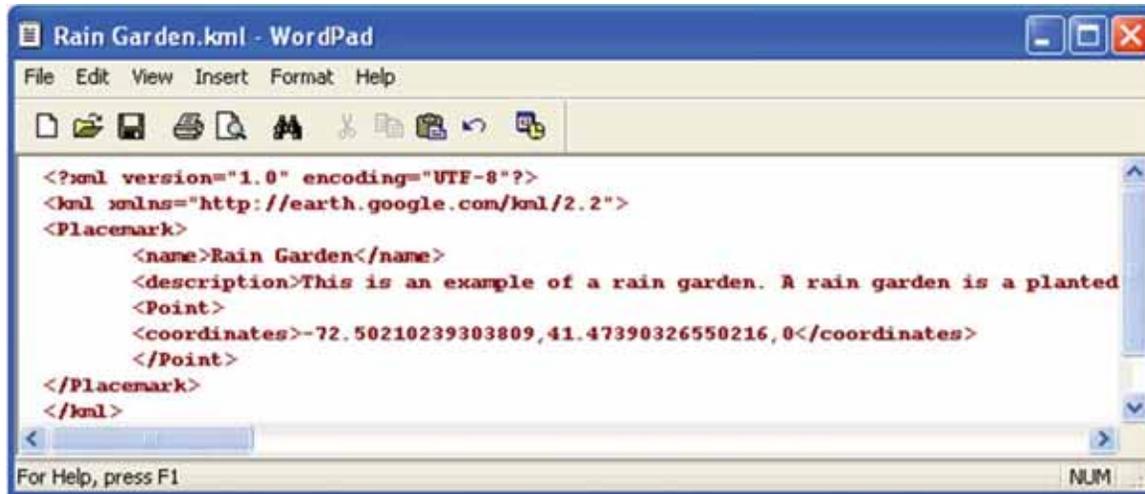


```
<?xml version="1.0" encoding="UTF-8"?>
<xml xmlns="http://earth.google.com/kml/2.2">
<Placemark>
  <name>Rain Garden</name>
  <description>This is an example of a rain garden. A rain garden is a planted
  <Point>
    <coordinates>-72.50210239303809,41.47390326550216,0</coordinates>
  </Point>
</Placemark>
</xml>
```



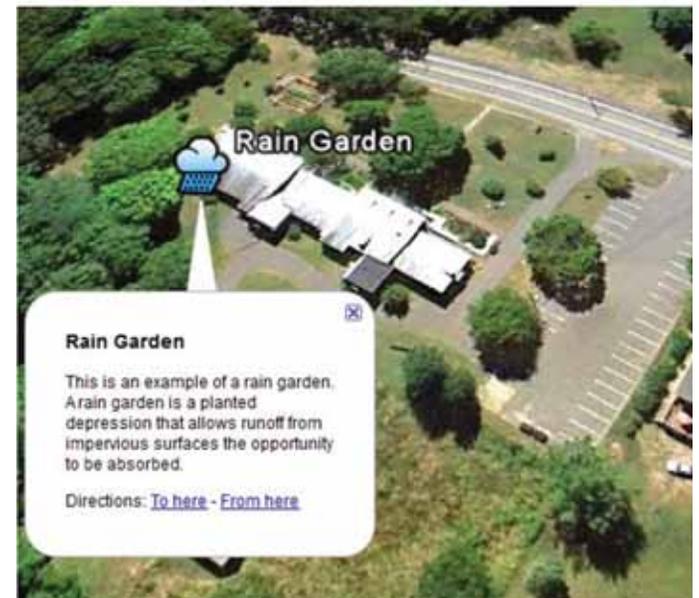
Keyhole Markup Language (KML)

KML is a file format used to display geographic information in Earth Browsers such as Google Earth and Google Maps.



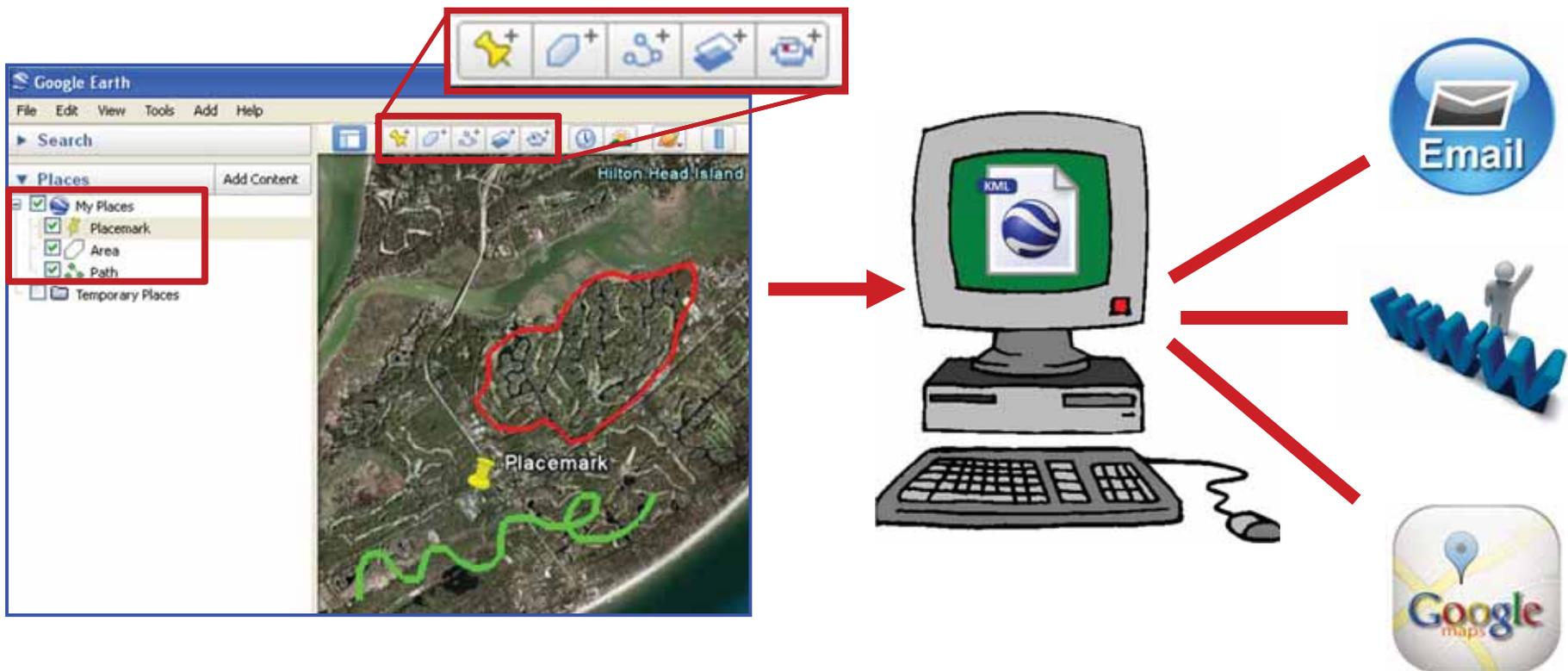
```
<?xml version="1.0" encoding="UTF-8"?>
<kml xmlns="http://earth.google.com/kml/2.2">
  <Placemark>
    <name>Rain Garden</name>
    <description>This is an example of a rain garden. A rain garden is a planted
  <Point>
    <coordinates>-72.50210239303809,41.47390326550216,0</coordinates>
  </Point>
</Placemark>
</kml>
```

KML uses a simple tag-based structure with nested elements and attributes and is based on the XML standard



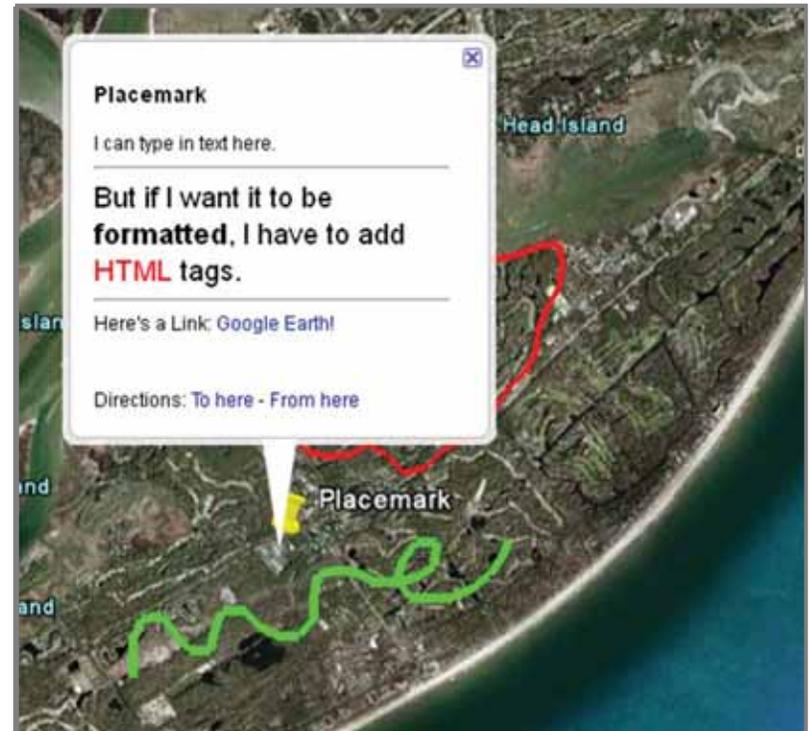
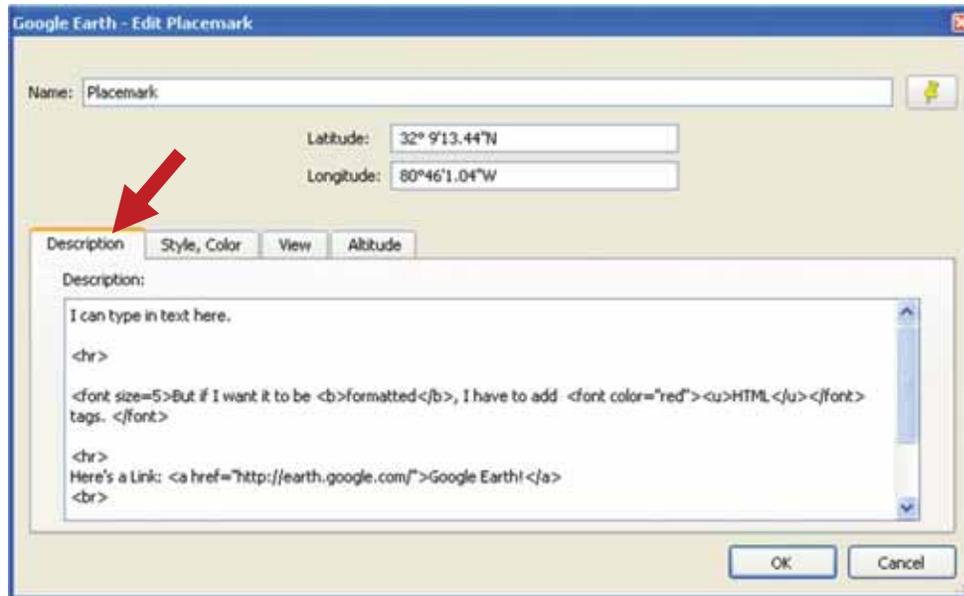
Creating and Sharing KML in Google Earth

Placemarks (points), Areas (polygons), Paths (lines) and Image Overlays can be created in Google Earth and saved to KML on your desktop and shared in a number of ways.



Formatting KML in Google Earth

Feature descriptions can be enriched by using standard HTML tags.



Customizing Pop Up Windows

http://earth.google.com/outreach/tutorial_balloon.html

Select a Template

Wide Photo

[Tall Photo](#)

[Text & Photo Banner](#)

[Text & Tall Photo](#)

[Text & Weblinks](#)

[All Templates](#)

Organization Name

About Us:
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Donec et nisi egestas magna commodo pharetra. Nunc ultricies augue et nulla. Morbi porta. Aenean faucibus convallis sapien. Suspendisse odio diam, auctor tempus, vulputate vel, venenatis sit amet, massa. Suspendisse potenti. Nunc ac mi ut elit tempus ntrum. Suspendisse quis diam. Ut vel sapien a justo sedales laoreet. Morbi eu augue sed ante tincidunt varius. Suspendisse aliquam.

[Link 1](#)
[Link 2](#)

Photo Title:
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Donec et nisi egestas magna commodo pharetra. Nunc ultricies augue et nulla. Morbi porta. Aenean faucibus convallis sapien. (photo credit)

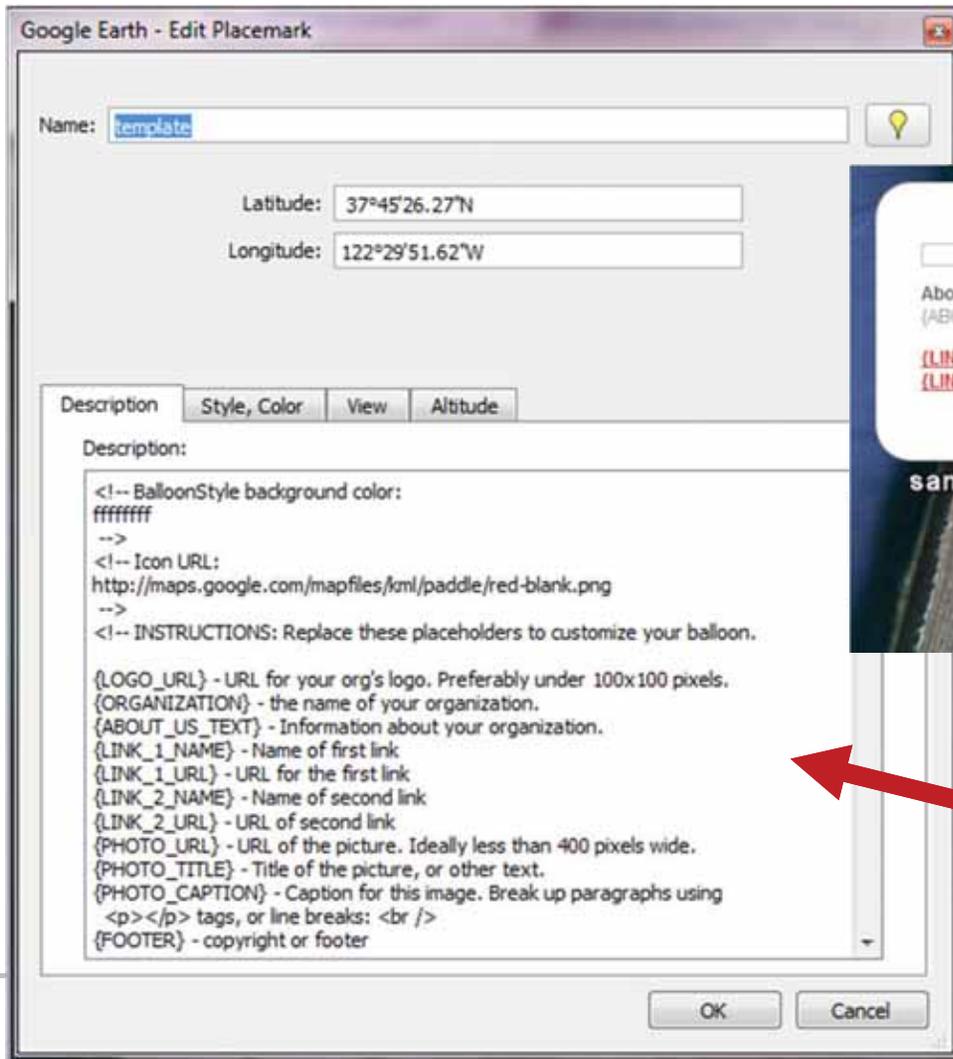
footer / copyright

[Download this template](#)

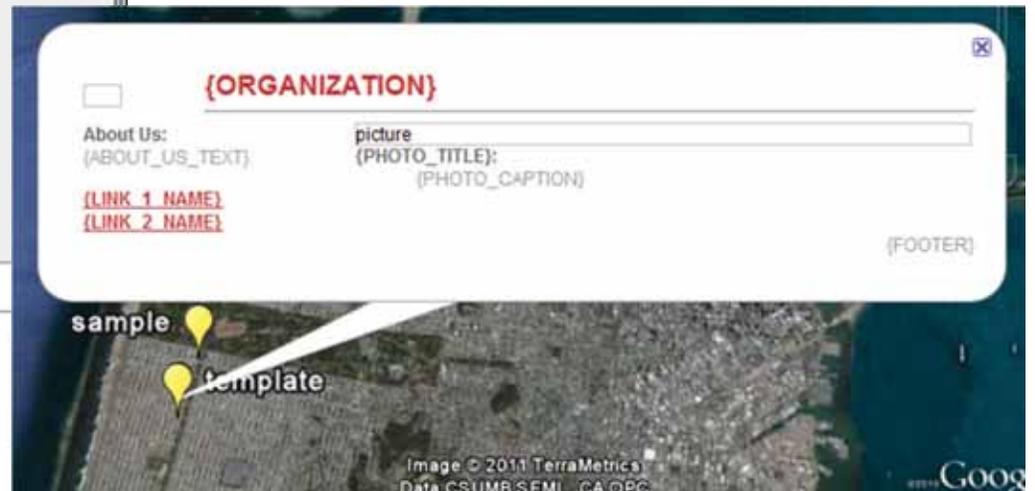
(Inspired by the *American Institute of Architects* layer)

Download Source Code as KML file

Customizing Pop Up Windows

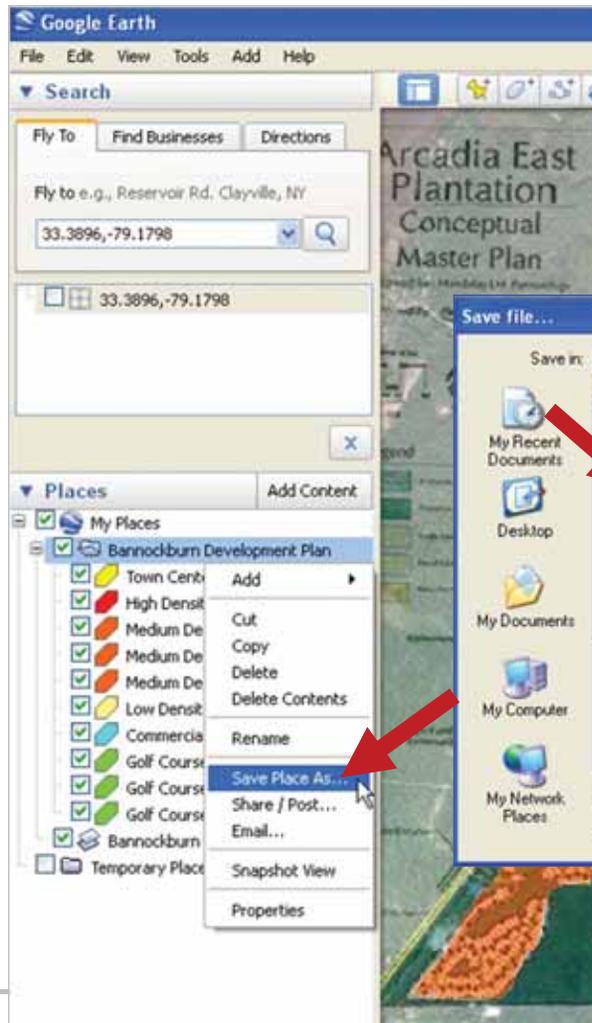


Open in Google Earth

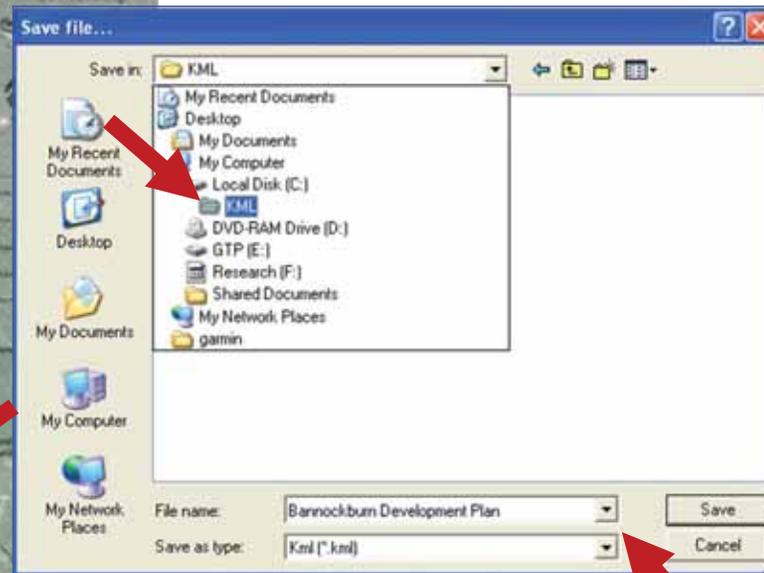


Template Properties window contains customized HTML and instructions

Saving and Sharing Data in Google Earth



Right-click > Save Place As



Save as .KML

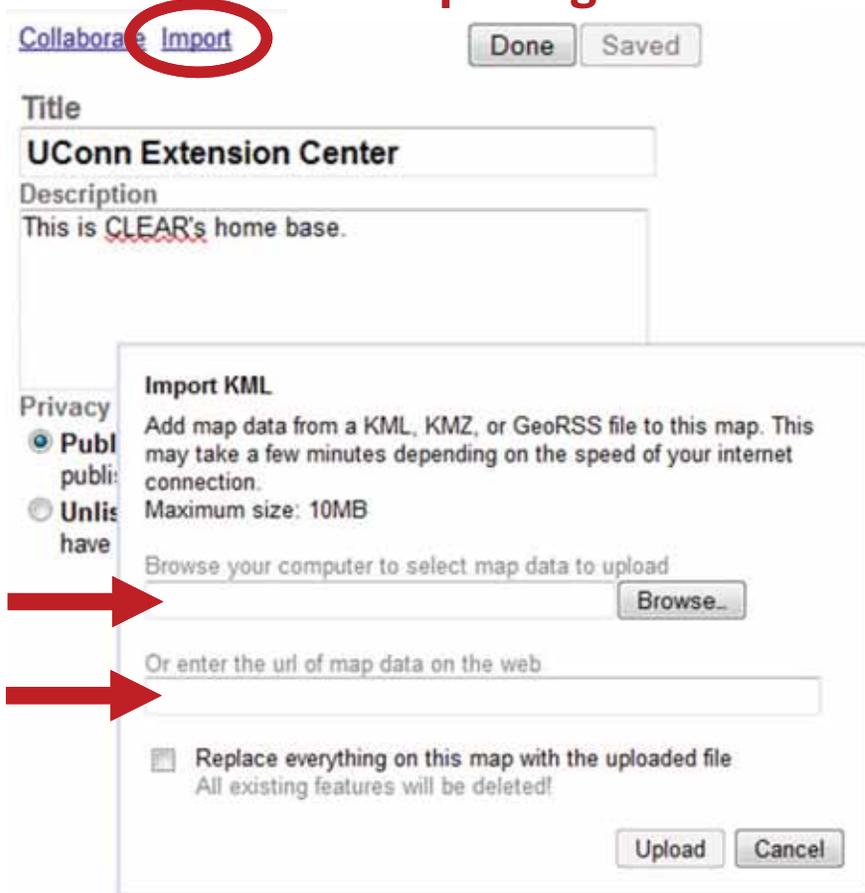
Live Demo



KML in Google Maps and Google Earth



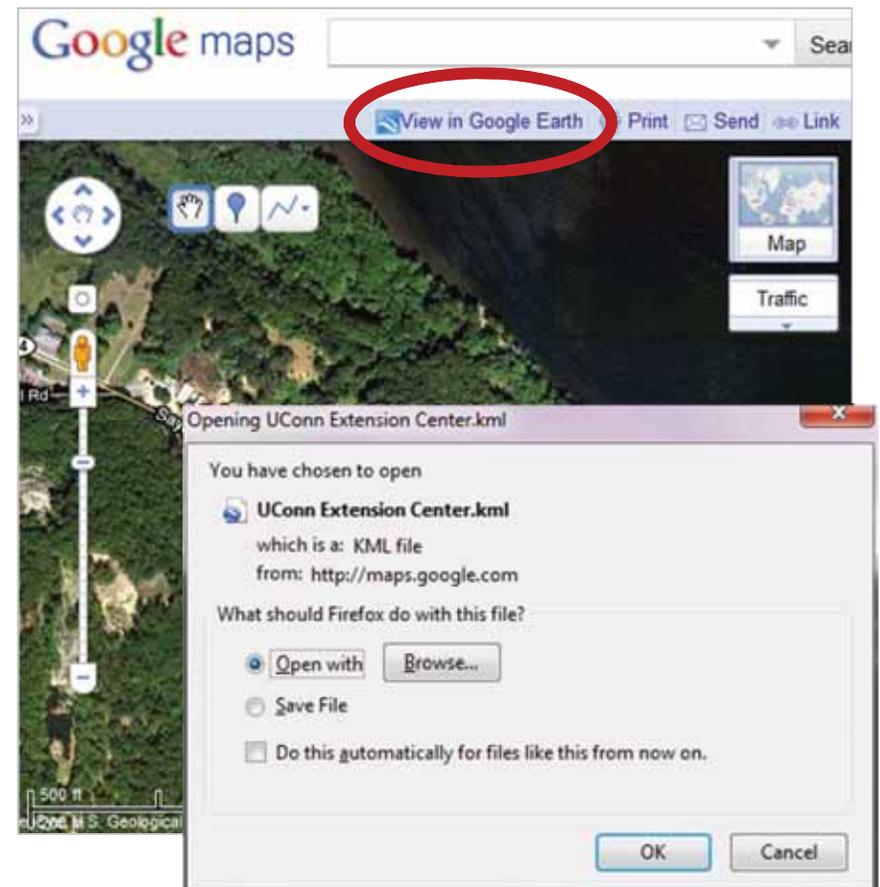
Importing KML



The screenshot shows the Google Maps 'Import' dialog box. The 'Import' link in the top navigation bar is circled in red. The dialog box contains the following elements:

- Title:** UConn Extension Center
- Description:** This is CLEAR's home base.
- Privacy:** Public (selected), Unlisted (unselected)
- Import KML:** Add map data from a KML, KMZ, or GeoRSS file to this map. This may take a few minutes depending on the speed of your internet connection. Maximum size: 10MB.
- File Selection:** A text box with a 'Browse...' button and a 'Browse...' button below it. Two red arrows point to these buttons.
- URL Option:** A text box for entering a URL.
- Replace Option:** A checkbox labeled 'Replace everything on this map with the uploaded file. All existing features will be deleted!'
- Buttons:** 'Upload' and 'Cancel' at the bottom.

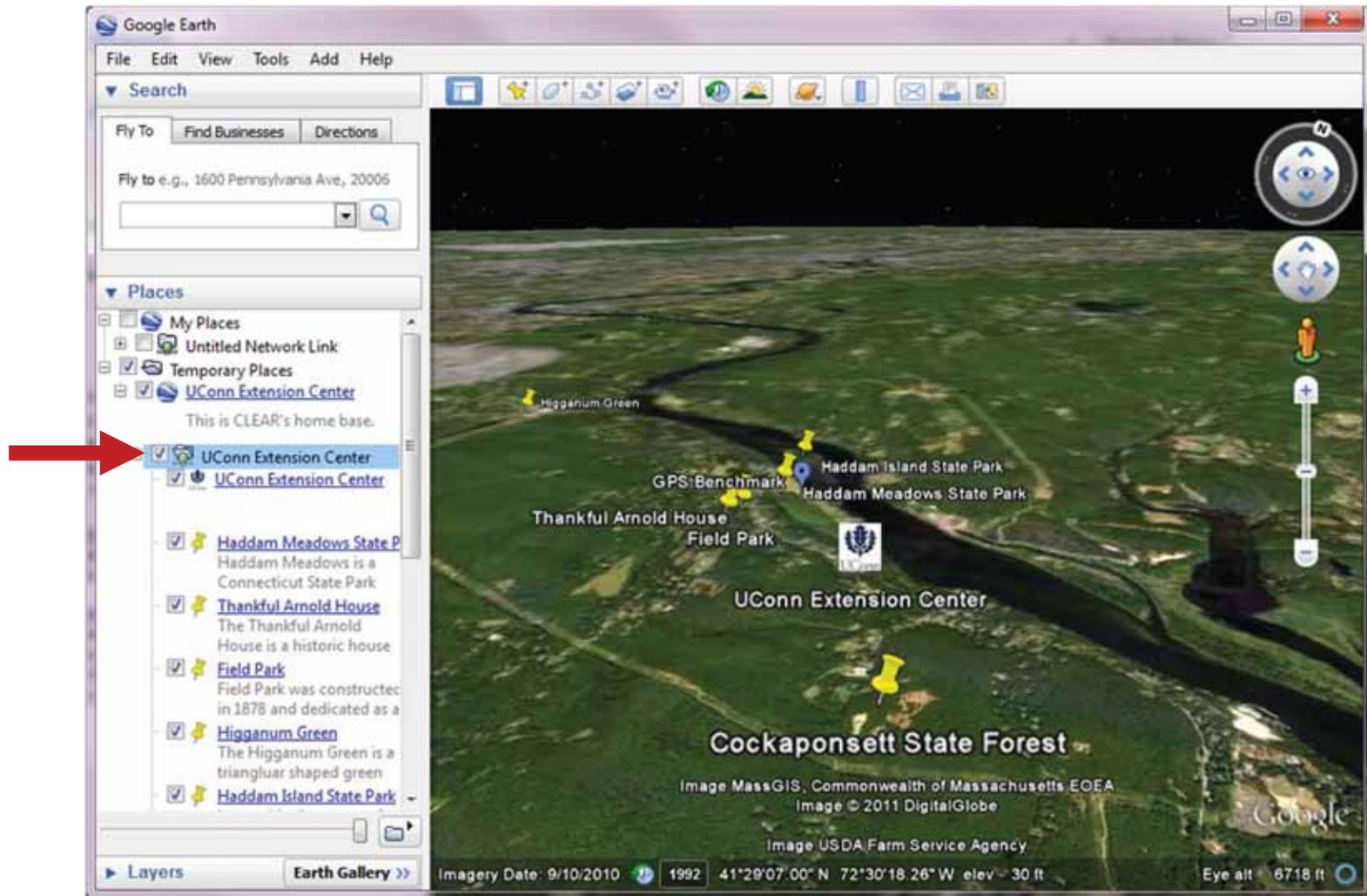
Exporting KML



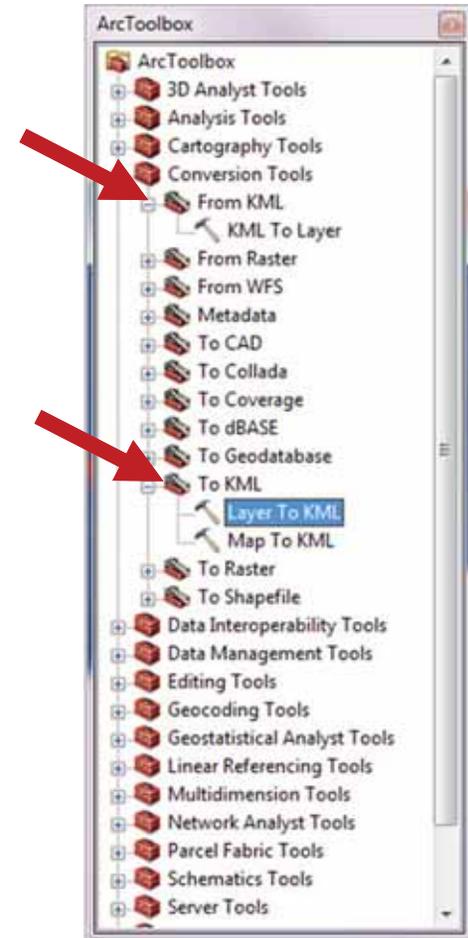
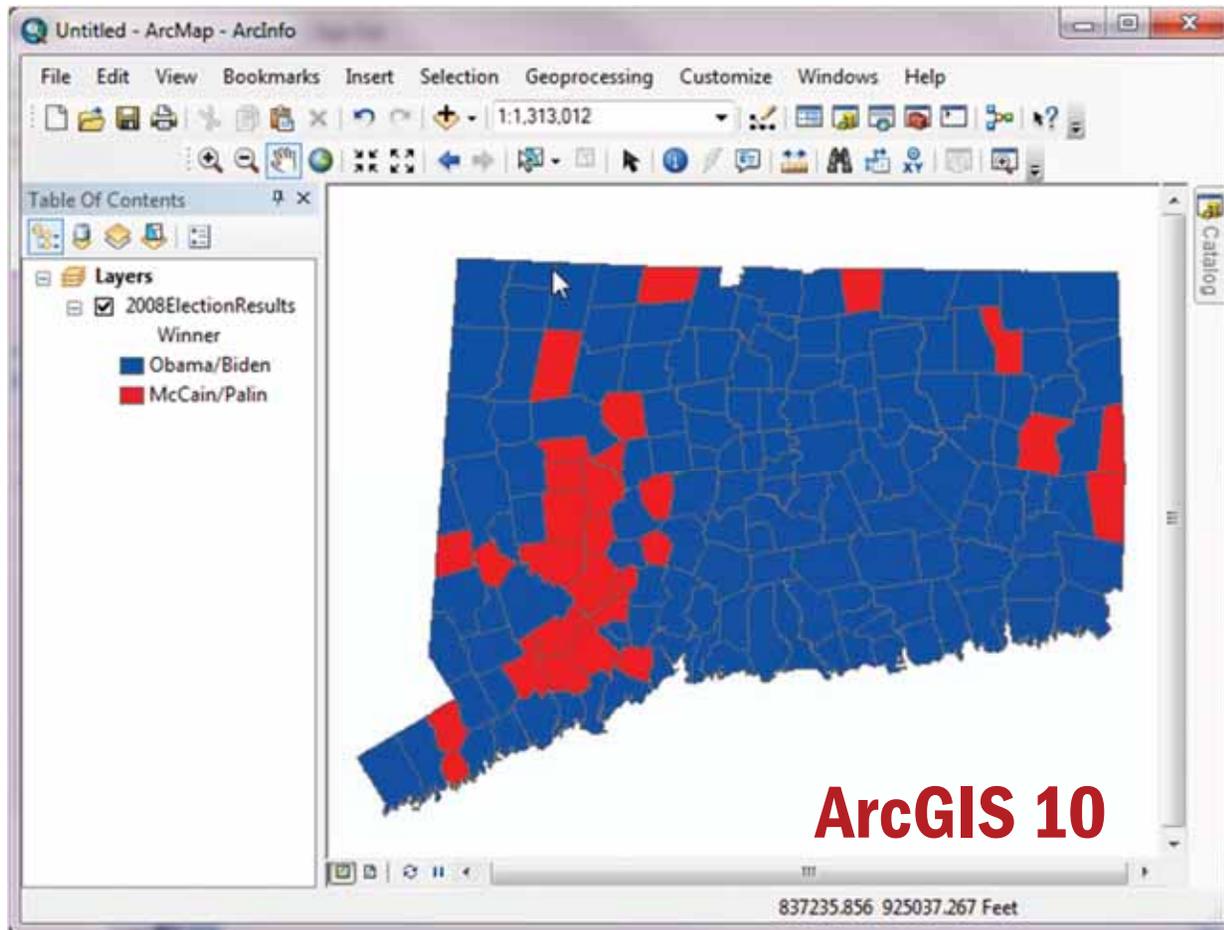
The screenshot shows the Google Maps 'View in Google Earth' dialog box. The 'View in Google Earth' link in the top navigation bar is circled in red. The dialog box contains the following elements:

- Title:** UConn Extension Center.kml
- Description:** which is a: KML file from: http://maps.google.com
- What should Firefox do with this file?:** Open with (selected), Save File (unselected), Do this automatically for files like this from now on. (unselected)
- Buttons:** 'Open with', 'Browse...', 'OK', and 'Cancel' at the bottom.

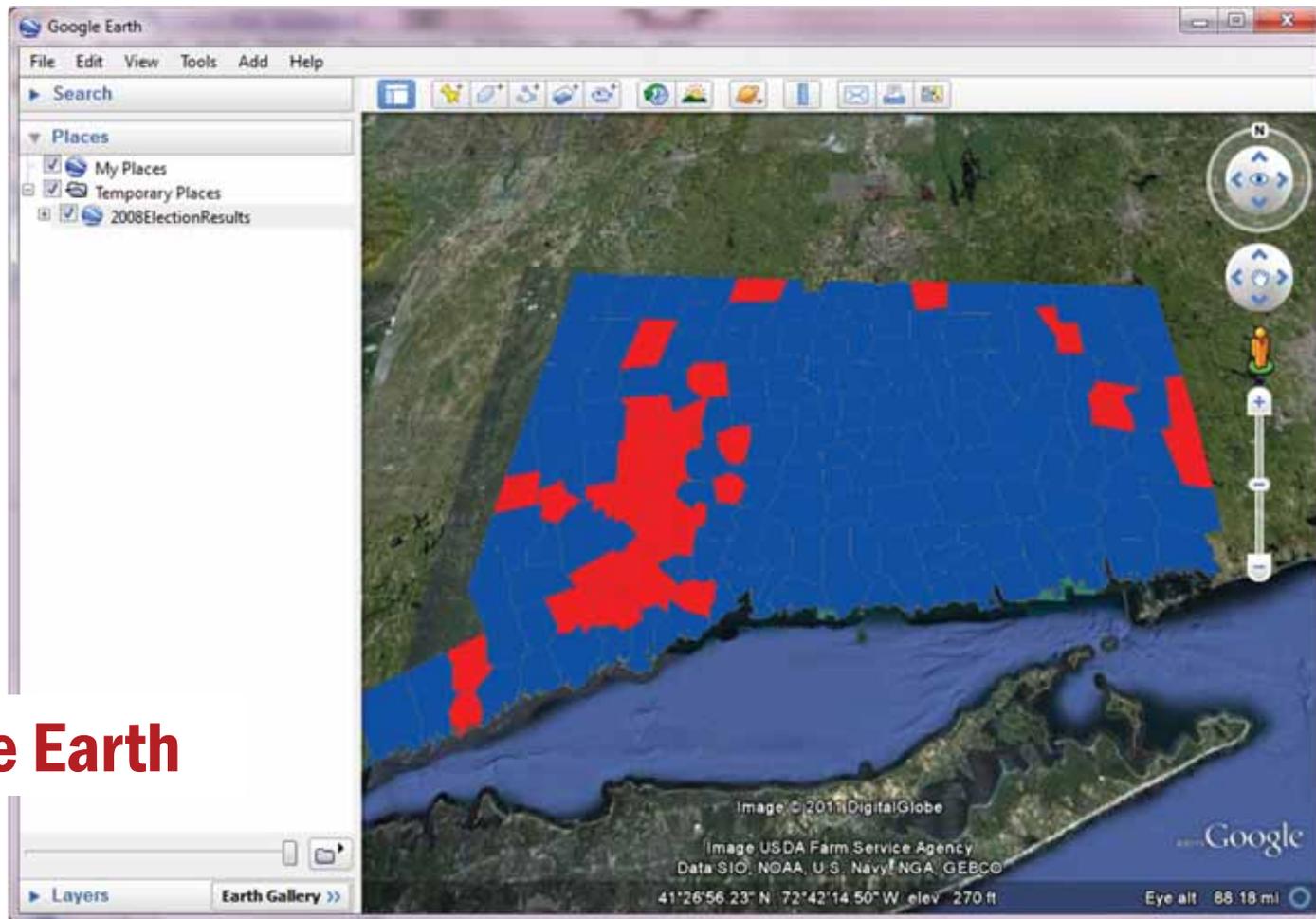
Exported KML in Google Earth



KML for ArcGIS Users

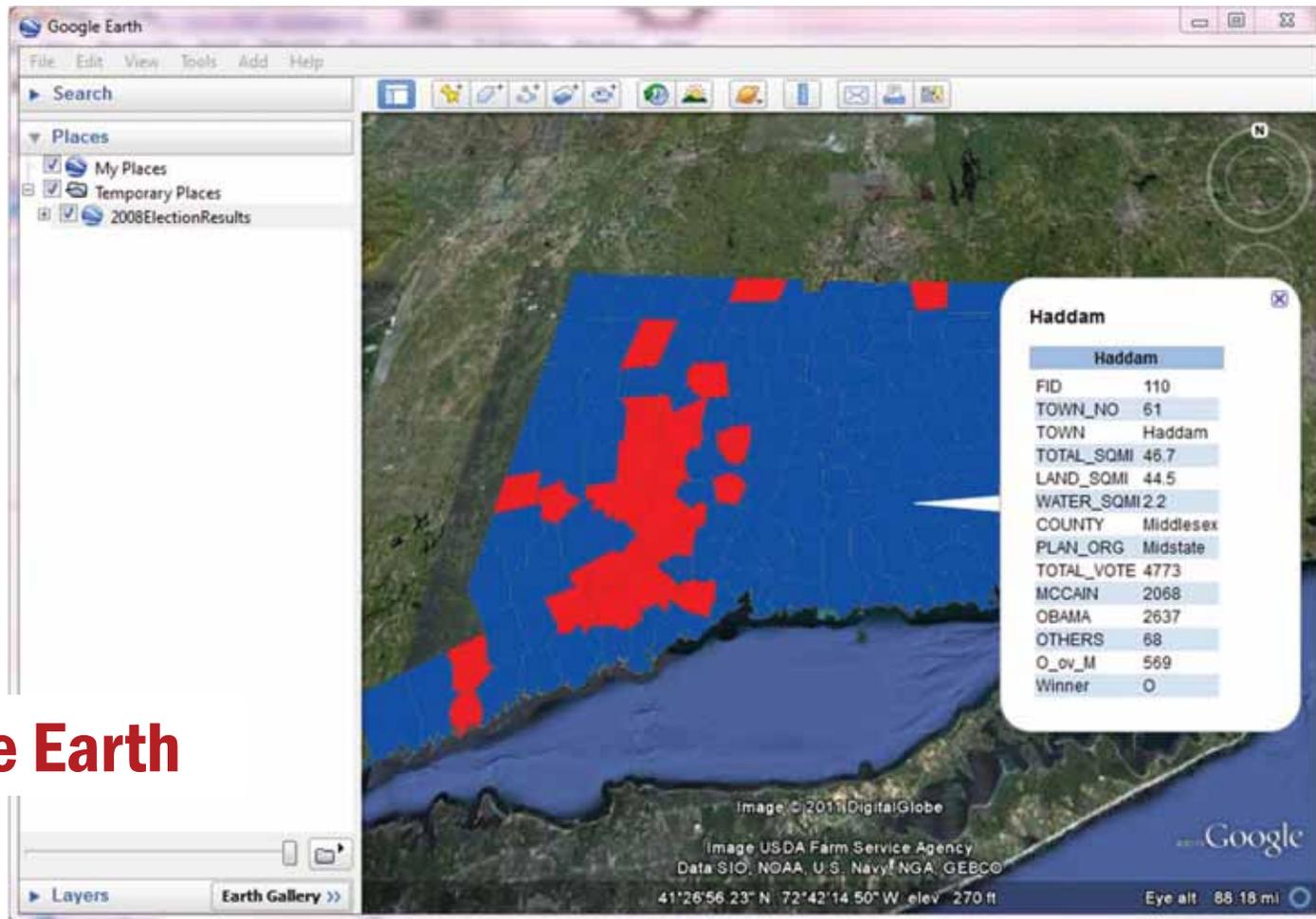


KML for ArcGIS Users



Google Earth

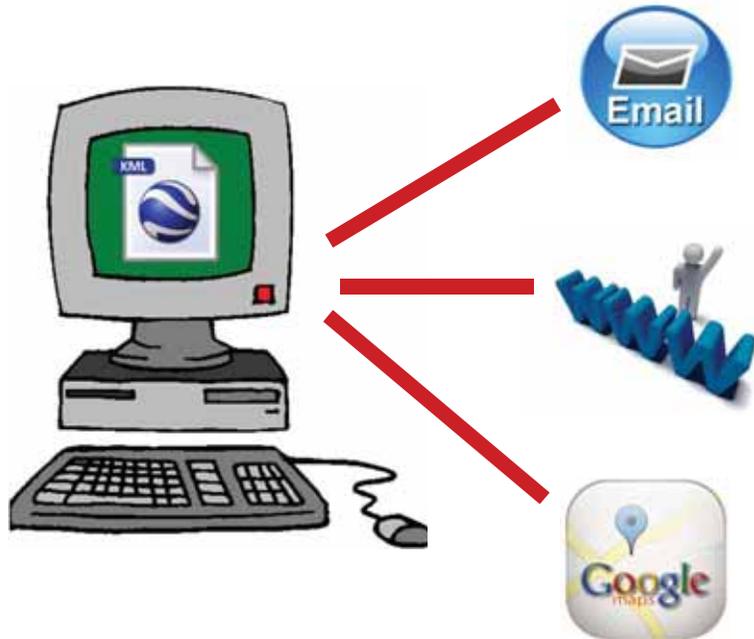
KML for ArcGIS Users



Google Earth

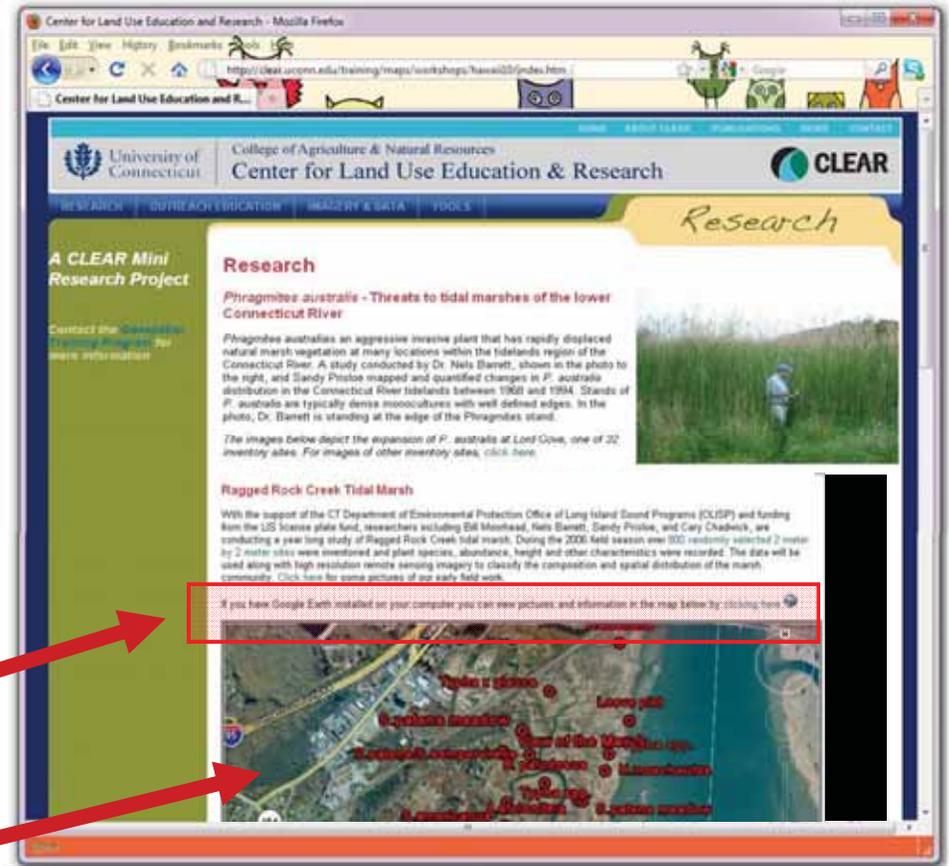


Sharing Your Map Data on the Web



 [Link to Google Earth File](#)

[Embedded Google Earth Map](#)



Embedding Maps in Websites – Option 1

CT Ag Loss Project - Google Maps - Mozilla Firefox

Google maps

Search Maps

Link

Bannockburn Plantation

1. Customize

Map size

Small Medium Large Custom

Width Height

2. Preview

3. Copy and paste this HTML to embed in your website

```
<div style="width:425px; height:250px; border:1px solid #ccc; margin:0 auto; text-align:center; padding:5px; font-size:10px; color:#ccc; background-color:#333; color:#fff; font-family:sans-serif; font-weight:bold; letter-spacing:1px;">Map of Bannockburn Plantation
```

Map of Bannockburn Plantation

Google maps

Sample Google Earth files - Mozilla Firefox

University of Connecticut

Center for Land Use Education & Research

CLEAR

Geospatial Training

Putting Maps and Geographic Data on the Web

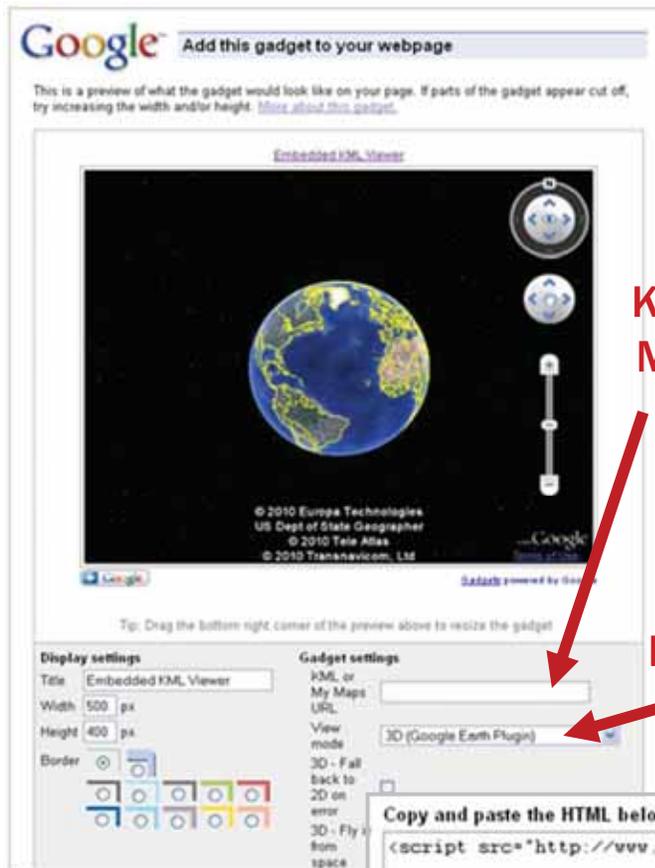
Map Sat Ter Earth

Done

Embedding Maps in Websites – Option 2

Check out the Google Embed Map Gadget!

<http://tinyurl.com/mapgadget>



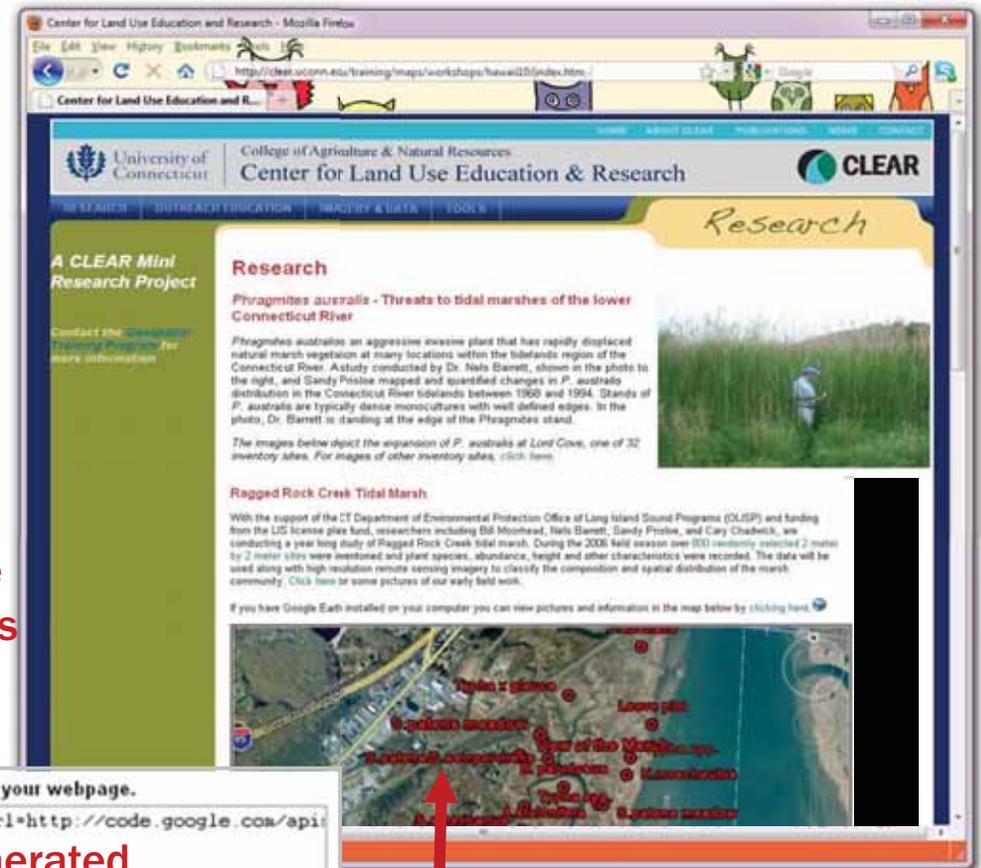
KML or My Maps URL goes in

Select map type (Google Earth requires plugin)

Copy and paste the HTML below to include this gadget on your webpage.

```
<script src="http://www.gmodules.com/ig/ifr?url=http://code.google.com/api
```

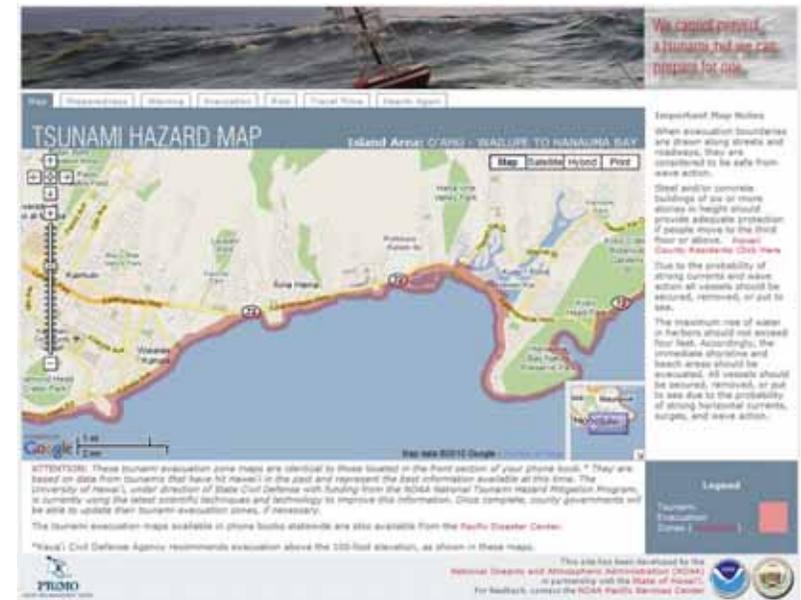
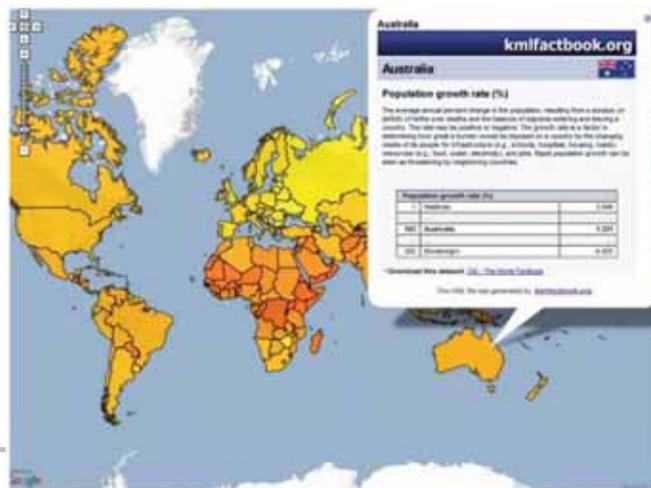
HTML code is generated for web applications



Have You Mastered Basic Mashups?

Advanced Mashup Topics:

- **KML Formatting (Advanced HTML)**
- **Programming with mapping APIs**
- **Database driven mashups (PHP & MySQL)**



Mashup Resources

Google Earth Resources

Google Earth User Guide	http://earth.google.com/userguide/v4/
Google Earth Help	http://earth.google.com/support/
Google Earth Community	http://tinyurl.com/beq5z
Google LatLong	http://google-latlong.blogspot.com/
Google Earth Blog	http://www.gearthblog.com/



Google Maps Resources

Google Maps Help	http://maps.google.com/support/
Google My Maps Help	http://tinyurl.com/kjo4sx
Google Maps Mania (Blog)	http://googlemapsmania.blogspot.com/



KML Resources

Google Code - KML Guide	http://code.google.com/apis/kml/documentation/
Google Earth Hacks (KML library)	http://www.gearthhacks.com/



CLEAR Trainings & Resources

<http://clear.uconn.edu/training/maps>

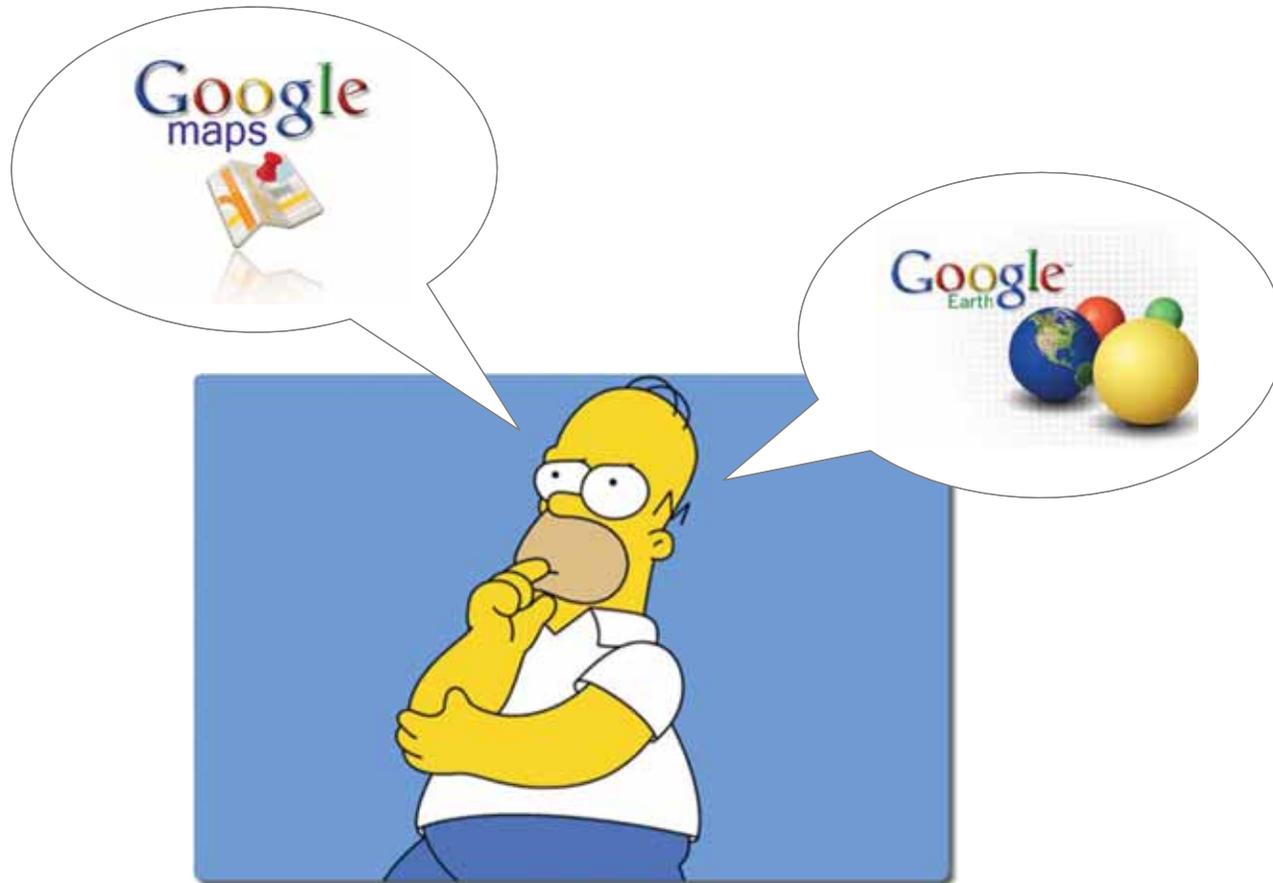
- **Keep it Simple:** static images, PDFs, GeoPDFs, Image Maps
- **Mashups:** Google My Maps, Creating KML, Working with mapping APIs, Tips and Tricks
- **Interactive Map Services:** ArcIMS, ArcGIS Server



Mashup Training!
May 24th
Middlesex County
Extension Center
Haddam, CT



Q & A



Thank You!

Cary Chadwick
cary.chadwick@uconn.edu

<http://clear.uconn.edu/geospatial>



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