

FNR 65 Lab 7

Music Festival, Part 1 – Acquiring Data

The BackBeat Music Group is looking at planning a music festival in Humboldt County. It is your job to gather all of the data, select a final location, and provide a preliminary environmental assessment of the site. In, "The Music Festival, Part 1 – Acquiring Data," you will navigate through GIS data portals and gather the data you will need to complete Labs 7 and 8. This lab was originally developed by James Graham at HSU and modified by Jason R. Patton at CR.

Learning Outcomes

- Find, acquire, and evaluate data (raster and vector) from the world wide web.
- Evaluate appropriate use of data through metadata and visual inspection.
- Acquire data from Humboldt County Web GIS, USDA NRCS, EarthExplorer USGS, and the National Wetlands Inventory.
- Find and read metadata.

Lab

1. Create a **Folder Structure** for your data.
2. Locate the drive named "Data (D:)".
 - a) Create a folder on (D:) with your name.
 - I. Right click on white space inside the (D:) folder window.
 - II. Click on New → Folder.
 - a) Within the folder you just created, create a subfolder named "Lab_07".
 - b) Within the folder named "Lab_07", create three subfolders as below:
 - c) Folder Structure (within Lab_01 folder):
 - i. 01_Originals
 - ii. 02_Working
 - iii. 03_Final

Humboldt County's Planning Division collects and develops GIS data and software for the initial purpose of supporting the General Plan Update. The goals of the division have expanded to meet the GIS needs of federal, state, and local agencies. This data is readily available for free download through the Humboldt County GIS Data Download webpage. The data comes in both raster and vector formats.

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3. Navigate to [Google](#) in your web browser and search **Humboldt County GIS** and click on **MAPS/GIS**, then the “**data download page.**”
4. Take a moment to read through the **Disclaimer** and **Data Projection** sections to become familiar with the data available.
5. Hold down **Ctrl** and **F**. A search window will pop up in the bottom left hand corner when using Mozilla Firefox:
6. Type **Land Ownership** in the search field, under **Parcels**, right-click **Shapefile** and "Save Link As..." into the **Originals** folder. Click on **Metadata** and read about the dataset.
7. Repeat this process for **Zoning** (which contains zoning codes), **Humboldt County GIS Roadway Centerline**, **Cell Tower Locations**, and **Humboldt County** (administrative boundary).

Question 1: What data have you obtained?

7. Complete a [QAQC Form](#) on all data obtained and proceeding data.
8. Un-Zip all of the downloaded files and extract them to the **Originals** folder.
9. Take a moment to project all of these datasets into **NAD 1983 UTM Zone 10N**. (use the “search” tool in ArcMap to find out how)
10. Navigate to [Google](#) again and search **Humboldt County Code Zoning**.
11. Click on the link shown here (save the pdf to the 01_originals folder) and use the **Ctrl+F** trick to search **Principal Zones**. Skim through the zoning codes to obtain a better understanding of the acronyms in the **Zoning** shapefile attribute table.

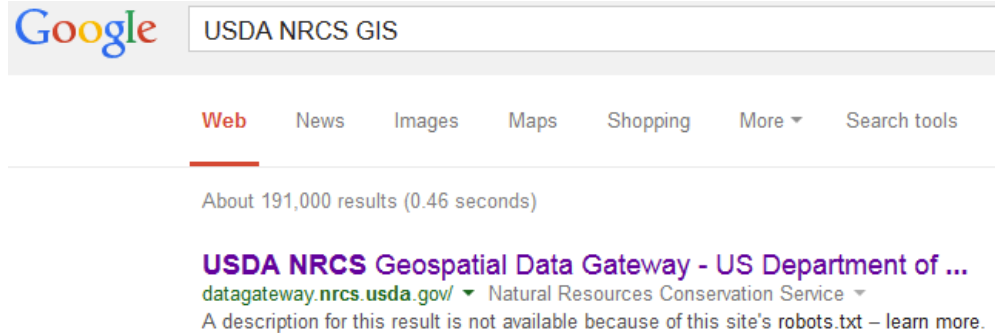


Question 2: What zone is your home located in?

USDA NRCS Geospatial Data Gateway (GDG) is a national database which provides environmental and natural resources raster or vector data. This data is free when downloaded directly from the web, but can also be shipped via CD or DVD at a price.

12. Navigate to [Google](#) and enter **USDA NRCS GIS** and select the link shown below:

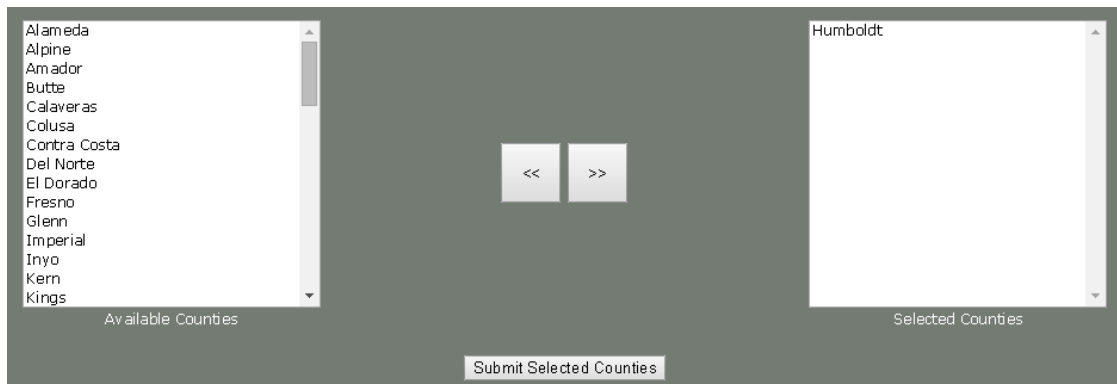
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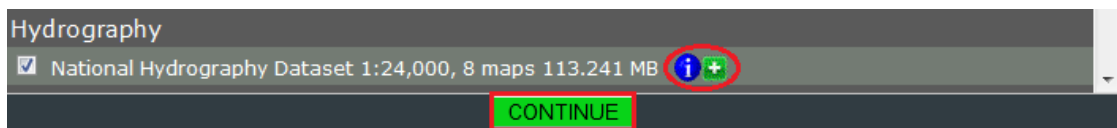
13. Click "GET DATA." Select **Order by Country/Counties** in the lower right hand corner of the website:



14. From the drop down menu select California, then highlight Humboldt and click the right arrow. **Submit Selected Counties.**



15. Scroll through the available options to familiarize yourself with the data available through the Geospatial Data Gateway.
16. Click on the blue identify icon to read a more in depth description of the data:



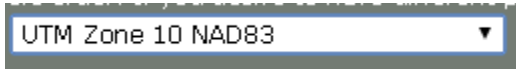

17. Check the hydrography dataset and click "Continue" when finished.
18. Select the **ESRI Shape** format:

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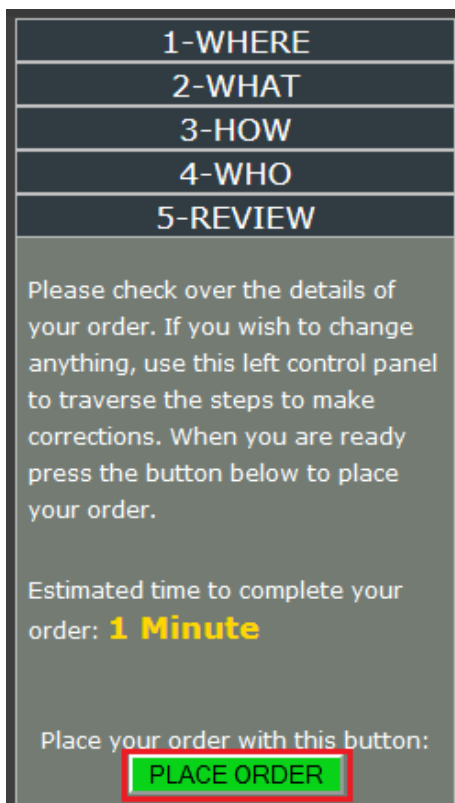
19. Select **UTM Zone 10 NAD83** as the Projection for this shapefile:



20. Select "FTP" as the order delivery method.

This will ultimately provide a download link to your email address. Data obtained in this format takes longer to obtain and requires processing.

21. Once you have finished filling in your personal information, select **Place Order** in the left hand panel:



1-WHERE
2-WHAT
3-HOW
4-WHO
5-REVIEW

Please check over the details of your order. If you wish to change anything, use this left control panel to traverse the steps to make corrections. When you are ready press the button below to place your order.

Estimated time to complete your order: **1 Minute**

Place your order with this button:

PLACE ORDER

U.S. Geological Survey's EarthExplorer is a service that allows you to search and download active and passive remote sensing data, as well as cartographic products obtained through USGS at the national level. This service provides a Google Map interface to select your area of interest and preview the data available for bulk downloading.

22. Navigate to [Google](#) and search **EarthExplorer USGS**. Click on the link shown below:

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Google search results for "USGS Earth Explorer". The search bar shows "USGS Earth Explorer" and a magnifying glass icon. Below the search bar are navigation links: Web, Shopping, Maps, News, Images, More, and Search tools. The results show "About 148,000 results (0.30 seconds)". The top result is "EarthExplorer - USGS" with the URL "earthexplorer.usgs.gov/". Below the title is the text "United States Geological Survey" and a description: "Query and order satellite images, aerial photographs, and cartographic products through the U.S. Geological Survey." At the bottom of the result snippet, it says "You've visited this page 2 times. Last visit: 2/4/14".

23. Click on **Register** and create a new account. Once complete, login to your email and click on the confirmation link to login to EarthExplorer USGS.

Header of the Earth Explorer website. It includes a "Home" link on the left and "Login", "Register", "RSS", "Feedback", and "Help" links on the right. The "Register" link is highlighted with a red box.

24. Under the **Address/Place** tab, type in **Humboldt County** and select the option that becomes available:

Search interface for "Address/Place". The search bar contains "humboldt county". Below the search bar are "Show" and "Clear" buttons. A message says "Click on an Address/Place to show the location on the map and add coordinates to the Area of Interest Control." Below this is a table with the following data:

Num	Address/Place	Latitude	Longitude
1	Humboldt County, CA, USA	40.7450	-123.8695

25. Click on "Data Sets." Expand the **Landsat Archive** and select **L8 OLI/TIRS** to obtain the most recent satellite imagery from Landsat 8:

Landsat Archive data set selection interface. The "Landsat Archive" section is expanded, showing a list of data sets with checkboxes and identify icons. The "L8 OLI/TIRS" data set is selected, indicated by a checked checkbox and a blue identify icon.

- L8 OLI/TIRS
- L8 OLI/TIRS Pre-WRS-2
- L7 ETM+ SLC-off (2003-present)
- L7 ETM+ SLC-on (1999-2003)
- L7 ETM+ Intl Ground Stations (Search Only)
- L4-5 TM
- L1-5 MSS

26. Click on the blue identify icon to obtain additional information on the dataset.
27. Leave **Additional Criteria** at default settings and click on **Results**.
28. Navigate through the **Data Set** and select the satellite image that would work best as a basemap for Humboldt County.

You do not want a basemap that has extensive cloud cover interference!

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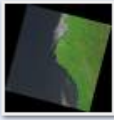



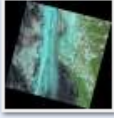
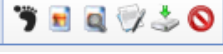
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Data Set [Click here to export your results »](#)

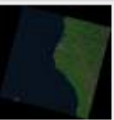

L8 OLI/TIRS

« First < Previous 1 Next > Last »

Displaying 1 - 10 of 42 ⓘ

1		Entity ID: LT81422122014156LGN00 Coordinates: 40.33322,-124.61089 Acquisition Date: 05-JUN-14 Path: 142 Row: 212 
2		Entity ID: LC80460322014155LGN00 Coordinates: 40.33254,-124.31519 Acquisition Date: 04-JUN-14 Path: 46 Row: 32 
3		Entity ID: LT81412122014149LGN00 Coordinates: 40.33317,-123.06061 Acquisition Date: 29-MAY-14 Path: 141 Row: 212 
4		Entity ID: LC80460322014139LGN00 Coordinates: 40.333,-124.31249 Acquisition Date: 19-MAY-14 Path: 46 Row: 32 

29. Select **Download Options**:

13		Entity ID: LC80460322013360LGN00 Coordinates: 40.33258,-124.35093 Acquisition Date: 26-DEC-13 Path: 46 Row: 32 
		Entity ID: LC80460322013360LGN00

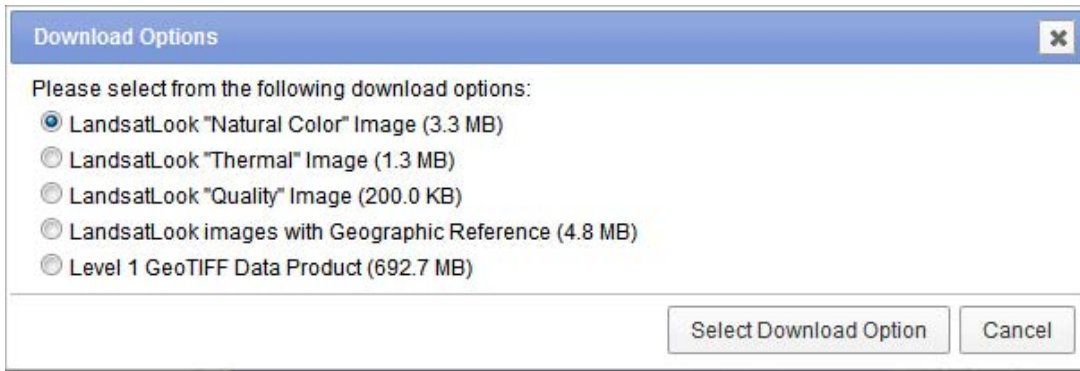
Download Options

30. From Download Options, select **LandsatLook "Natural Color" Image**:

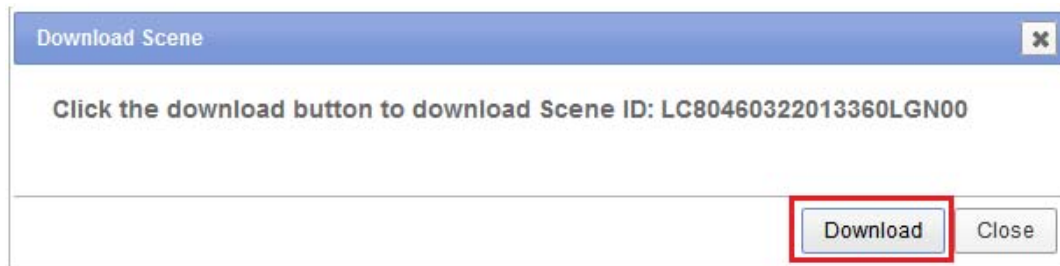
The other options are not relevant for the purpose of this lab, but keep them in mind for the future.

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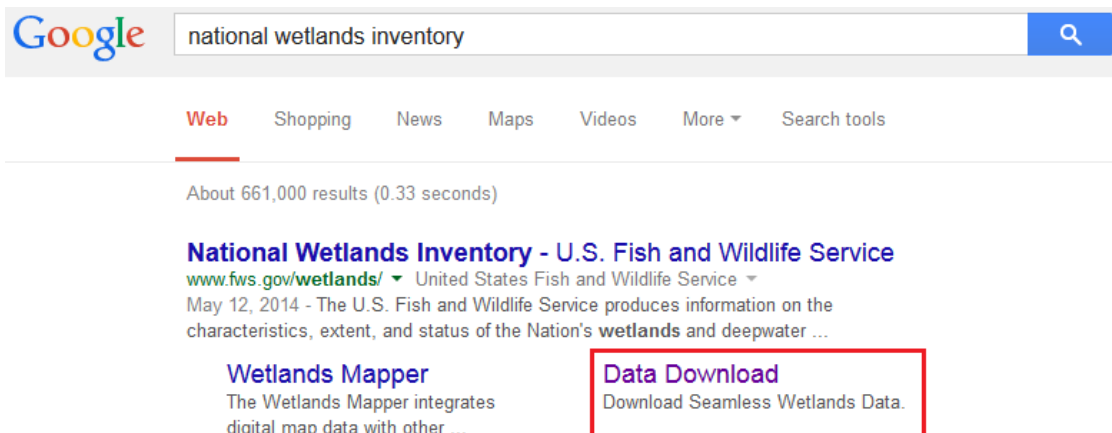


31. Click on **Download**, and be sure to save this to the **Originals** folder:



The U.S. Fish and Wildlife Service National Wetlands Inventory is a comprehensive database that provides vector data on the Nation's wetlands and deepwater habitats.

32. Navigate again to [Google](#) and search **National Wetlands Inventory**. Select **Download Data** from the search results:



33. Follow the directions and read the sections labeled: **Disclaimer**, **Data Limitations**, **Exclusions and Precautions**, and the **Wetlands Geodatabase Under Caution**.

Note that there are two methods for downloading wetlands data - for this lab, we will use the Wetlands Mapper.

34. Select the **Wetlands Mapper** option:

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There are **two methods** for downloading seamless wetlands data as viewed on the Wetlands Mapper:

Download



The Wetlands Mapper **Download Data by Extent** tool uses the [Wetlands Mapper](#) to create a ZIP file containing a compressed file [Geodatabase](#) and [Shapefile](#) of the current visible extent. A web link for downloading the file will be sent by email. This tool is available by visiting the Wetlands Mapper, zooming to an area of interest, then selecting the **Download Data in Current Extent** tool from the **Tools** menu.



[Data by State](#)

Each **State dataset** is available for [download](#) as either a compressed file [Geodatabase](#) or a [Shapefile](#).

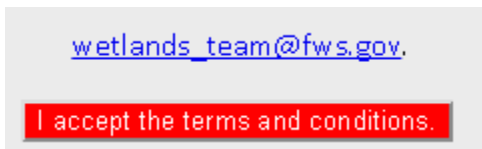
35. Once this option has been selected, go to "Step 3" and **Click here to Open the Wetlands Mapper**:

3



[Click Here to Open the Wetlands Mapper](#)
(data last modified on May 1, 2014)

36. Click "I accept the terms and conditions."



37. Under **Tools**, select **Download Data by State** from the drop-down menu:



Ordinarily, you would right-click and save the shapefile for California in the **Originals** folder, but since this file is fairly large, it will be available in [SA Course Files \(X:\)](#).

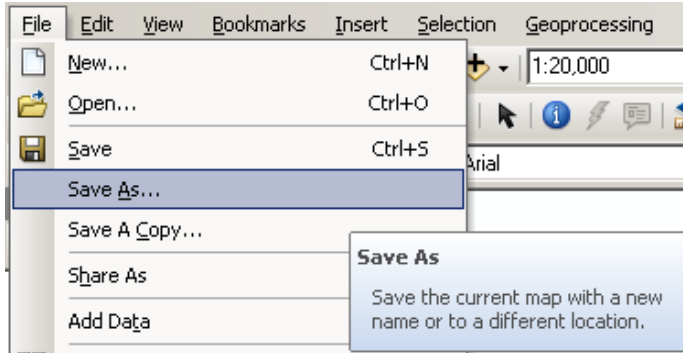
California	Geodatabase	Shapefile	
Colorado	Geodatabase	Shapefile	
Connecticut	Geodatabase	Shapefile	
Delaware	Geodatabase	Shapefile	
Florida	Geodatabase	Shapefile	
Georgia	Geodatabase	Shapefile	
Hawaii	Geodatabase	Shapefile	
Idaho	Geodatabase	Shapefile	
Illinois	Geodatabase	Shapefile	
Indiana	Geodatabase	Shapefile	
Iowa	Geodatabase	Shapefile	
Kansas	Geodatabase	Shapefile	
Kentucky	Geodatabase	Shapefile	
Louisiana	Geodatabase	Shapefile	
Maine	Geodatabase	Shapefile	
Maryland	Geodatabase	Shapefile	
Massachusetts	Geodatabase	Shapefile	
Michigan	Geodatabase	Shapefile	
Minnesota	Geodatabase	Shapefile	
Mississippi	Geodatabase	Shapefile	
Missouri	Geodatabase	Shapefile	
Montana	Geodatabase	Shapefile	
Nebraska	Geodatabase	Shapefile	
Nevada	Geodatabase	Shapefile	
New Hampshire	Geodatabase	Shapefile	
New Jersey	Geodatabase	Shapefile	
New Mexico	Geodatabase	Shapefile	
New York	Geodatabase	Shapefile	
North Carolina	Geodatabase	Shapefile	
North Dakota	Geodatabase	Shapefile	
Ohio	Geodatabase	Shapefile	
Oklahoma	Geodatabase	Shapefile	
Oregon	Geodatabase	Shapefile	
Pennsylvania	Geodatabase	Shapefile	
Rhode Island	Geodatabase	Shapefile	
South Carolina	Geodatabase	Shapefile	
South Dakota	Geodatabase	Shapefile	
Tennessee	Geodatabase	Shapefile	
Texas	Geodatabase	Shapefile	
Utah	Geodatabase	Shapefile	
Vermont	Geodatabase	Shapefile	
Virginia	Geodatabase	Shapefile	
Washington	Geodatabase	Shapefile	
West Virginia	Geodatabase	Shapefile	
Wisconsin	Geodatabase	Shapefile	
Wyoming	Geodatabase	Shapefile	

37. Using ArcCatalog, copy and paste the wetlands shapefile into the **Originals** folder. It has already been projected into **UTM NAD 1983 Zone 10N**.

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38. From File within ArcMap, select "Save As..." and save your work into your primary folder! You will be re-opening this for Lab 6 and 7.



Summary of Data Download Links

- Humboldt County Planning and Building Department [Data Download](#) webpage.
- United States Department of Agriculture Natural Resource Conservation Service [Geospatial Data Gateway](#).
- United States Geological Survey [EarthExplorer](#).
- U.S. Fish and Wildlife Service National Wetlands Inventory [Data Download](#).

In Lab Turn-In

At the end of the lab, please turn in a QAQC Form for all data acquired.

Take Home Turn-In

Export a TIFF of the datasets with a report that includes a table on the name of the dataset, where it was obtained, and any issues with the data. Fill out the report and email the report to the instructor.