BIOS 6 Basics Transcript

Introduction (00:00)

Welcome to BIOS Basics, the first part of a 3-part training course covering everything you need to know to get started working in the California Department Fish and Wildlife's (CDFW) web-map viewer. My name is Joel Boros, I am the BIOS Lead, and your primary point of contact for questions and comments regarding BIOS. In this first session we will cover the basics of accessing and using BIOS.

Topics (00:26)

In this lecture we will cover the following topics: what BIOS is and how to access it, data security and categories, navigating BIOS, searching for data, viewing metadata and downloading data, adding BIOS and reference data, working with the active layer, working with the Identify Features Tool and the California Natural Diversity Database (CNDDB) QuickView Tool, changing basemaps, and where to find additional help.

Biogeographic Data Branch Programs (01:00)

The Biogeographic Information and Observation System, also known as BIOS, is part of the Data and Technology Division within CDFW. BIOS is under the Biogeographic Data Branch alongside several other programs including: Areas of Conservation Emphasis (ACE), California Natural Diversity Database (CNDDB), Spotted Owl Observations Database (SPOWDB), California Wildlife Habitat Relationships (CWHR), Vegetation Classification and Mapping Program (VegCAMP). All these programs produce spatial data and some if not all of it is available in BIOS.

What is BIOS? (01:41)

What is BIOS and what purpose does it serve? BIOS is a web-map viewer with a catalog of biological data. It was first released in 2002 and has since grown from a handful of datasets to thousands. In a broad sense, BIOS serves as California's primary data portal for biodiversity data. BIOS was created by CDFW as a place to store and make available all of its spatial biological data. BIOS was designed with several points in mind.

- To enhance data discovery, to make the data you are looking for easier to find. This coincides with the Department's new Data Governance Policy, which looks to make our data more transparent and accessible.
- To provide a platform to view GIS data for users who lack the knowledge to use or access to Geographic Information Systems (GIS) software.
- In addition to biological data, we also provide access to reference data, such as a variety of basemaps, aerial imagery, hydrography, land cover, ownership, and other useful datasets.

Accessing BIOS (02:53)

To access BIOS, visit the URL shown here or simply search the web for "CDFW BIOS" and it

is generally the first search result. On the BIOS webpage you will see several buttons for different viewers, these are all just different flavors of the same viewer. Each is focused on a particular topic, and when opened the viewer will have data preloaded which relates to the specific topic. All viewers have the same functionality and access the same catalog of data and tools. For instance, the California Natural Diversity Database Viewers have all of the CNDDB related data preloaded, and the Area of Conservation Emphasis Viewer has all of the ACE terrestrial and aquatic biodiversity data preloaded.

BIOS Home Page (03:47)

Here you can see the BIOS Homepage with several buttons to launch the viewers we just discussed. In addition, you will notice several links in the panel to the right. From here you can access additional resources on more information about BIOS, the Training and Tutorial page, information about submitting data to BIOS and a link to contact us with questions.

BIOS Splash Screen (04:13)

When you first launch a viewer you will see a splash screen where you can find important announcements and a reminder to read the metadata to better understand what each dataset is meant to represent. Below that, you can choose to either continue to the public version of the viewer or choose to log into the secure viewer using either CNDDB subscriber credentials or CDFW staff credentials.

Data Security (04:30)

BIOS employs a stepped-data security model. Public data accounts for the majority of data in BIOS, over 90%. This data is available to everyone without a need to log-in and is downloadable. In addition to the public data, we have secured data available to CNDDB subscribers. These datasets contain sensitive species information which is used by the scientific community, in particular those working with species conservation and habitat management. Additionally, there are a handful of datasets only available to CDFW staff, these are generally draft working files used by CDFW staff.

Available Data Types (05:23)

BIOS includes primarily biological datasets useful for natural resource management activities. These include sensitive species protection and enhancement, such as the CNDDB, fish ranges from the National Oceanic and Atmospheric Administration, and terrestrial species critical habitats from the U.S. Fish and Wildlife Service. Species connectivity modeling, including habitat corridor and linkage planning. Renewable energy planning, as seen in the Desert Renewable Conservation Plan viewer. Invasive species tracking, included in the statewide analysis of invasive plants by quad from the Invasive Plant Council and regional data such as invasive plants in the San Joaquin River, as shown here. Also included is supporting data such as water quality readings, and wind turbine data which could be used for analyzing bird strikes. Additionally, you will find reference data such as counties, quads, rivers and lakes, USDA ecoregions, and land ownership. Data sources can be one-time collections or ongoing work, such as monitoring and mitigation.

Data Contributors (06:42)

We do not create any of the data in BIOS. The data is contributed to our catalogue from a variety of sources. The majority comes from CDFW scientists, but we also get data contributed from other federal, regional, and state government agencies, universities, and consultants. In our role as data stewards, we host the data and make it available in our map viewer. However, the contributor retains ownership of the data and is responsible for ensuring accuracy, completeness, and providing updates.

Map Overview (07:20)

When the map first opens, it is set to a default map view, over central California, with the Contents panel open. The viewer has 4 parts, the map, a banner across the top, the contents panel on the left, and the Tool List or tools on the right. To open the Tool List press the Tools button in the upper right. The banner allows you to login and quickly access the Contents panel, the + BIOS Data tool, or the Tool List. Both panels on the left and right can be closed with the X button in the top right. To re-open them, click on the respective buttons in the banner.

Navigate - Pan & Zoom (08:05)

When the map first opens, it is set to a statewide level zoom. From here there are several methods for navigating within the map. Click and drag or use the arrow buttons on your keyboard to pan the map and recenter it. There are several options to zoom in and out of the map.

- You can use the scroll wheel on your mouse, if it has one.
- You can use the plus or minus buttons on your keyboard or the buttons within the map seen in the graphic above.
- You can hold down the shift button, click and drag to draw box in the map that you want to zoom into.
- Or you can choose a zoom level from the list of preset options provided in the drop-down list within the map.

Navigate - More Options (08:48)

Enter an address or place location into the search box at the top left, then press Enter or the search button, to zoom to that location. Pressing the button with the house returns the map zoon to the default level. If you loaded a bookmark, this button then takes you to the saved map extent. The crosshair button pans and zooms you to your actual location; you may be prompted to allow the web browser to know your location, to use this function you must allow it. In the bottom right is a button to toggle between two basemaps; this will be discussed in further details later in this session.

Search for Data (09:26)

You can search through our data catalog using the Add Data tool, which generates an alphabetical list of available datasets. This list can be further refined by entering key words to filter the results. For example, entering “river otter” will return only results related to the river otter. Additionally, you can exclude ACE and CWHR data layers from the results by checking the

respective boxes. From the results, clicking on the + button adds the layer to the current map session. Once the data has been added the + button will be replaced with a checkmark.

Adding Data (10:03)

Once data is added, it appears in the Contents panel on the left, under the BIOS Layers section. Multiple data layers can be added to your BIOS session. To access additional layer options, press the three ellipses after the layer name in the BIOS Layers section. This gives access to items such as the metadata panel, zoom to layer button, and quick access to queries and filters. To view the layers symbology, press the right arrow button to the left of the layer name in the Contents panel, then press the show legends button.

Metadata & Download (10:41)

From the metadata panel you can view a summary of the data, find contact information for the contributor, see when the data was last updated, view the full metadata, and download the data. When you click the download button, the GIS files for the entire dataset are saved to your computer. If the dataset is secure, the download button will be greyed out and you will need to either contact the contributor or us here at BIOS.

BIOS Homepage - Data Portal (11:24)

Another option for downloading data is the CDFW Open Data Portal, which allows you to choose the format of the data download. To get to the CDFW Open Data Portal from our BIOS home page, click on the CDFW Open Data Portal link under related information.

CDFW Open Data Portal (11:42)

The same data is available in the Open Data Portal and can be located using the same search terms. For example, if you were working with the Historic Trout Watershed dataset in BIOS, the same data is available in the Open Data Portal. Once you have located your dataset, click the Download button on the left-hand panel and select the format you are interested in. If you are only interested in the attribute table, select the CSV (comma separated value) download option. The CSV can then be opened in Excel. You can also export the data in KML format if you prefer to work in Google Earth.

Reference Data (12:22)

Several categories of reference layers are preloaded into the BIOS viewer for ease of use. They are found in the left-hand panel and are grouped according to content. Reference layers can be turned on and off in the map and can be made the active layer like any of the other data layers in BIOS.

BIOS Tool List (12:43)

The tools in BIOS are found in the Tool List, which can be accessed via the Tools button in the upper right, in the banner across the top of the viewer

Active Layer (11:43)

All tools in BIOS work with the active layer. To make a layer active, click on the dataset name in the Contents panel. The active layer is given a blue highlight. If no layer is active, and a tool which requires one is opened, you will be prompted to active a layer first. Only 1 layer can be active at a time.

Identify Features - How To (13:17)

The Identify Features tool can be accessed from the Tool List. As previously mentioned, layer must be active for the tool to work. This tool will select all features in the active layer in the specified geographic location clicked, so all stacked features are selected. Clicking on a feature in the active layer within the map selects it.

Identify Features - Results (13:40)

The Identify Features tool will list the coordinates for the point clicked in the map. The results table is opened at the bottom of the viewer showing the corresponding record for the selected feature. If the table is closed, it can be accessed again from the Tool Menu, via the Result Table tool. To clear the selected feature, press the Clear Identified button in the Identify Features tool. This will clear all identified locations.

CNDDB QuickView - Methods (14:10)

I would like to show you how to use our CNDDB Quick View tool, which is found on the Tool List. This tool can be used to generate a list of special status species. The tool opens on the right-hand side and prompts you with a brief description of the tool, some useful links to resources, and a link to a User Guide. You can create a list of special status species using one of the three available methods. Choose either list CNDDB species for a Quad, 9 Quads, or by county. Select your preferred method, then click on the map and a list of special status species is returned.

CNDDB QuickView Tool Example - By Quad (14:51)

The results are drawn from the mapped data in the CNDDB database, as well as the unprocessed data that has been submitted through the Online Field Survey Form, but not yet mapped. More details about Mapped versus Unprocessed data are available in the User Guide.

CNDDB QuickView - By Species (15:11)

You can also use the CNDDB Quickview Tool to view where a special status species has been reported in the state. To do this, type the scientific or common name in the “View CNDDB Quad Data by Species” search box, then press enter.

CNDDB QuickView Tool Example - By Species (15:29)

The map will zoom to show the resulting data with the CNDDB mapped species shown as purple and the unprocessed data shown as stone blue. The tool also returns a count of quads the species was found in and lists its special status.

Basemaps (15:49)

You may have noticed the map can get a little bit busy, you can change the basemap so it is not competing with the data. We have a variety of maps to choose from under the Basemaps tool in the Tool List, including topo maps, imagery, and a simple gray canvas map which is a great choice for busy data. When the tool is opened, a series of thumbnails images will open allowing you to select your desired basemap. Simply click on the thumbnail and the map will update with the selected basemap. If you recall, there is a Toggle Basemap button in the bottom left of the map which allows you to toggle between two basemaps. The currently selected basemap is represented by the thumbnail on the bottom and a secondary choice is available by clicking the button. To select a different option for the secondary basemap, click the button, then select a different basemap within the Basemaps tool. Then simply press the button to toggle between the two selected basemaps.

Additional Help (15:23)

If you find yourself in need of additional assistance while working in BIOS, press the green Help button in the upper right corner. This will open a panel with several helpful links, including our User Guide, the Tutorials and Training page, and an option to email us with your questions.

Closing (17:23)

For more information on BIOS, please view the next two parts of the training course, BIOS Tools and BIOS Advanced Tools. Thank you for your time.