PBIN WebGIS Service

PBIN's WebGIS Service provides an intuitive visual interface to Hawaiian biodiversity data.

Background

The Pacific Basin Information Node (PBIN), as part of the National Biological Information Infrastructure (NBII), collects information and develops products and services to address biodiversity related questions for Hawaii and the Pacific Basin region. One of PBIN's core applications is its WebGIS Service. This online interactive map provides the public with the ability to browse numerous sources of biologically relevant Pacific Basin data. PBIN hopes it can foster an increased public understanding of the patterns that exist between species (both native and invasive) and the environment.

The Mapping Service

The updated WebGIS Service includes contributions from a wide variety of partners, including the Hawaii Biodiversity and Mapping Program (HBMP), State of Hawaii, the U.S. Geological Survey (USGS), the Bernice Pauahi Bishop Museum (BPBM), and many others.

The dynamic mapping service allows users to:

- view a variety of base layers,
- create maps in real time with PBIN-provided data layers,
- view point metadata,
- add data (notes, etc.) to maps,
- incorporate maps into new information products (e.g., work orders), and
- contribute data to the service.

Available Data

Primary data layers available through PBIN's WebGIS Service include: satellite imagery, hydrography (water), geographic names, and hypsography (elevation). Other data layers – such as habitat classifications, shoreline types, invasive and native species distributions, threatened and endangered species, land stewardship, transportation, and climate layers – paint a more complete picture of the region's biodiversity.

Map Functions

The PBIN WebGIS Service provides all of the functionality that users have come to expect from an online mapping tool. Users scan, zoom, pan, measure distances, and retrieve extra information for particular features. More advanced querying and buffering tools are also available.

A suite of markup tools allow for more sophisticated manipulation of data, including custom annotation with points, polygons, and test. A search tool makes it easy to find locations using places names, street names, or zip codes. Users can bookmark, e-mail, and download completed customized maps. They can even upload a custom map to continue working on a project saved earlier.

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Maps allow people to visualize spatial relationships between data, which can illuminate relationships that would otherwise remain obscure. Modern GIS software has given users the power to create and customize maps according to their own information needs; and thus, users can more easily explore the implications of their data.

Photo credits: papaya tree and Laysan finch - Angela K. Kepler; map screen captures - PBIN Map Service; butterflyfish - James E. Maragos, USFWS

From left to right: Papaya tree; remaining native vegetation on Oahu; butterflyfish; parrotbill distribution on Maui; and Laysan finch.

Advanced Uses

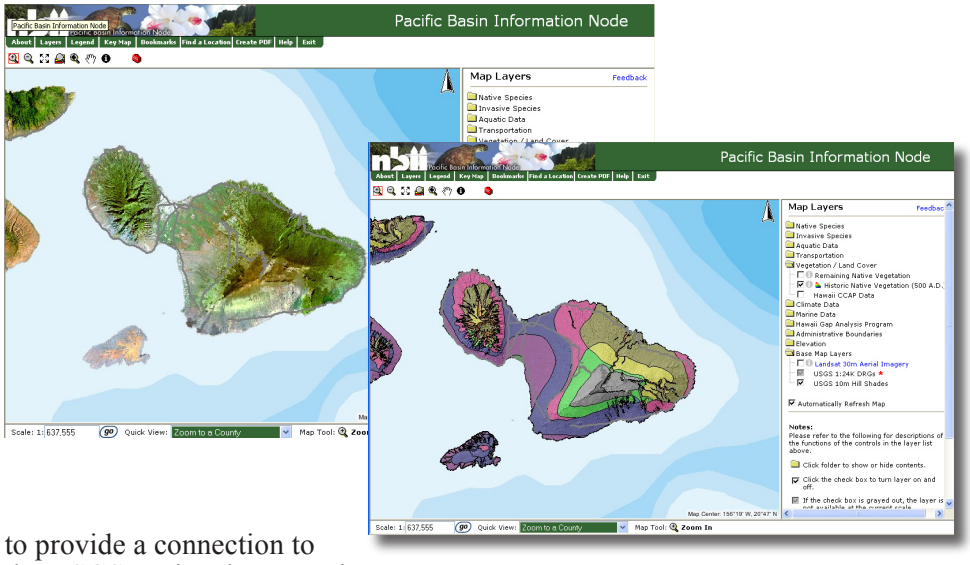
For users with more advanced GIS needs, the WebGIS Service can be pulled into an ArcGIS document and viewed with the user's local data from others sources. Alternatively, most layers can be downloaded and manipulated as individual shapefiles.

Metadata Catalog

Metadata, or "data about the data," have become increasingly important to users who want to understand where the data come from and how they were processed. PBIN's WebGIS Service provides a Metadata Catalog to fill those information needs.

Technical Information

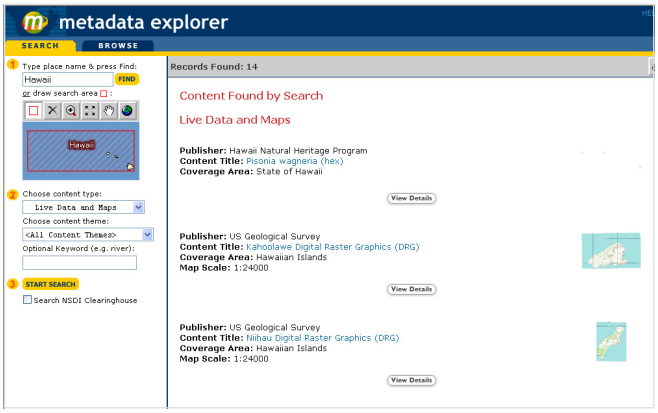
The WebGIS Service resides on a Windows server running ESRI's ArcIMS and ArcSDE. The interface is enhanced by Moximedia's Internet Mapping Framework, which facilitates features such as data downloading, map markup, PDG creation, and many of the other advanced map creation and customization tools. Additionally, the OGC connector has been installed to provide a connection to the USGS National Map and ensure interoperability with other non-ESRI applications.



Map layer showing historic native vegetation around 500 AD.

The Future

Future efforts for the WebGIS Service will strive to improve service to users by implementing state-of-the-art mapping tools as they are developed in the industry. PBIN and its partners will continue to integrate available biodiversity and geospatial data sets to create a robust and seamless biodiversity mapping service to users.



The Metadata Catalog Interface

For More Information

Dr. Mark Fornwall
NBII/PBIN Node Manager
Phone: 808-984-3724
E-mail: mark_fornwall@usgs.gov

Dr. Barbara Gibson
Hawaiian Biodiversity and Mapping Program
Phone: 808-587-8600
E-mail: bgibson@hawaii.edu

Find us on the Web at: <http://pbin.nbii.org>.

Find Mapping Services at: <http://pbin.nbii.gov/maps/index.html>.

Find WebGIS Services at: <http://pbin.nbii.gov/maps/interface.html>.

The National Biological Information Infrastructure (NBII) <www.nbii.gov> is a broad, collaborative program to provide increased access to data and information on the nation's biological resources. The NBII links diverse, high-quality biological databases, information products, and analytical tools maintained by NBII partners and other contributors in government agencies, academic institutions, non-government organizations, and private industry. NBII partners and collaborators also work on new standards, tools, and technologies that make it easier to find, integrate, and apply biological resources information. Resource managers, scientists, educators, and the general public use the NBII to answer a wide range of questions related to the management, use, or conservation of this nation's biological resources.