



NBII California Information Node

The NBII California Information Node (CAIN) demonstrates solutions for data discovery, exchange, and interoperability...

Background

The National Biological Information Infrastructure (NBII) <www.nbii.gov> is an electronic information network that provides access to biological data and information on our nation's plants, animals, and ecosystems. Data and information maintained by federal, state, and local government agencies; non-government organizations; and private-sector organizations are linked through the NBII gateway and made accessible to a variety of audiences including researchers, natural resource managers, decision-makers, educators, students, and other private citizens.

Implementation of the NBII is being accomplished through the development of nodes that serve as interconnected entry points to the NBII and the information held by partners. These nodes function as fully digital, distributed, and interactive systems that focus on developing, acquiring, and managing content on a defined subject area (thematic nodes) or a geographic region (regional nodes). The regional California Information Node began work in 2001.

Primary Issues

From the deserts to the Redwood forests, California encompasses the most diverse biological region in the West. Home to more than 35 million residents, the state faces many issues



California coast

that affect the landscape, wildlife, and people. Sharing and integrating information and data holdings from multiple institutions across the region can help address these challenges. The NBII California Information Node (CAIN) – currently in development – demonstrates solutions for data discovery, exchange, and interoperability for data sets critical to California's environmental decision-making process.

The Information Center for the Environment (ICE) at the University of California, Davis (UCD) hosts the node. ICE specializes in environmental informatics in the region, particularly geospatial data systems

for biodiversity, land use, and water quality, and is a major university partner in information integration in California under the California Biodiversity Council, the CALFED program, the California Geographic Information Association, and multiple interagency cooperative agreements.

The NBII CAIN team has a strong background in infrastructure issues and will develop appropriate data exchange/integration structures and demonstrate them in the context of a specific problem and its community – the management of invasive species. The components chosen for prototyping are parts of an envisioned comprehensive biological data exchange network. It is expected that the development of these keystone tools will be done within a framework of conceptualization of the architecture of such a network. The development and testing of these techniques is important for the creation of the NBII. This work will be done in collaboration with other NBII nodes, thus creating the opportunity for idea exchange.



Mt. Shasta, California

Products and Services

In 2002, CAIN released *CRISIS Maps*, an interactive map display and data viewer for weed observations in the regions of California and the Southwest that demonstrate the value of sharing data at a regional level. Data sources include the U.S. Geological Survey (USGS) Southwest Exotic Mapping Program, Team Arundo del Norte, the California Department of Food and Agriculture, and selected species from the CalFlora database. *CRISIS Maps* runs under the MapServer Web mapping software system and uses the PostGIS spatial database extension to a PostgreSQL database to store weed observations and enable a simple updating process. In subsequent years, CAIN plans to expand this model to include additional invasives data content as well as other key regional biological data sets.

The development of the Sierra Nevada Research Projects Catalog, in collaboration with the U.S. Forest Service Sierra Nevada Research Center, comprises another key component for CAIN. This project



Redwood Forest Road, California

provides scientists, land managers, and the general public access to data and information about research projects across the Sierra Nevada region. In addition to providing an interactive mapping display, scientists and others can contribute information about their projects directly to the database.

Through the significant efforts of the Information Center for the Environment with assistance from the CAIN team, the CALFED Bay-Delta Program plans to release an electronic journal of scientific information as part of the long-term comprehensive plan that will restore ecological health and improve water management for beneficial uses of the Bay-Delta System.

CAIN plans to continue the development of tools and methods for automated, Web-based biodiversity data exchange and analysis and apply these tools to real-world scenarios to assist land managers, policy makers, and the general public.

Partners

- University of California, Davis, Information Center for the Environment (ICE)
- U.S. Forest Service Sierra Nevada Research Station
- USGS Southwest Exotic Mapping Program
- Team Arundo del Norte
- California Department of Food and Agriculture
- CalFlora
- California Resources Agency, CERES Program, Legacy Program
- CALFED Bay Delta Program



Death Valley, California

- University of California, Davis, Center for Image Processing and Advanced Computing
- University of California, Davis, Center for Spatial Technologies and Remote Sensing.

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Find us on the Web at:
<<http://cain.nbii.gov>>.

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