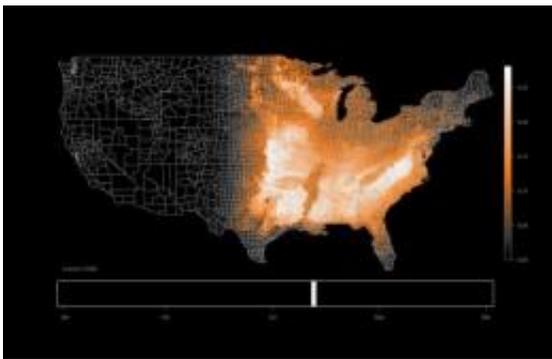


# New DataONE portal streamlines access to environmental data

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Easier access to data through a new search software from DataONE promises to aid data-intensive research projects such as eBird, which combined multiple data layers to make predictions about bird migration patterns. The map above shows the predicted occurrence of the eastern bluebird in August 2008. Additional animated maps are available at

<http://ebird.org/content/ebird/about/occurrence-maps/>. Credit: ORNL

Environmental researchers who investigate climate change, invasive species, infectious diseases, and other data-intensive topics can now benefit from easy access to diverse datasets through technology released today by the Data Observation Network for Earth, or DataONE.

Understanding broad and complex [environmental issues](#) increasingly relies on the [discovery](#) and analysis of [massive datasets](#). But the amount of collected data — from historical field notes to real-time satellite data

— means that researchers are now faced with an onslaught of options to locate and integrate information relevant to the issue at hand.

DataONE, a ten-institution team including researchers from the Department of Energy's Oak Ridge National Laboratory, is addressing this data dilemma with a one-stop search engine called ONEMercury that queries data centers located around the world for relevant earth science information. ORNL's Robert Cook, John Cobb, Line Pouchard, and Giri Palanisamy are part of the National Science Foundation-supported DataONE team that collaborated on the newly released software, along with researchers from the University of Tennessee's School of Information Sciences in the College of Communication & Information, the University of New Mexico and other partners. At the heart of the new software is an advanced search engine developed by Palanisamy and colleagues at ORNL.

"This search system enables researchers to discover, access and explore data that exist at many different repositories around the Internet," Cook said. "Previously there's been no 'federation' of all these different data centers that would allow someone to come in from one place and search of all these resources."

DataONE's search tool enables researchers to easily integrate previously incompatible datasets, as demonstrated by an ongoing project that is already yielding results in the field of ecology. A DataONE working group has combined a database of amateur bird sightings with environment data layers about land use, weather and vegetation to make refined predictions about bird migration patterns.

"The whole process of making data available, and making the data so it could be readily integrated, really benefited the bird ecologists," Cobb said. "That's one example of how having data available lets people look at new and important issues."

The tool, which is freely available to the public at <http://www.dataone.org/find-data>, provides access to data from sources such as the U.S. Geological Survey, the Ecological Society of America, ORNL's Distributed Active Archive Center, the National Science Foundation's Long Term Ecological Research Network, South Africa National Parks, the Knowledge Network for Biocomplexity, and the Partnership for Interdisciplinary Studies of Coastal Oceans, among others. DataONE partners expect more organizations to join in the coming months.

DataONE is led by the University of New Mexico and includes partner organizations across the United States, Europe, Africa, South America, Asia and Australia. In East Tennessee, others participating in DataONE are the University of Tennessee, led by Bruce Wilson who has a joint UT-ORNL appointment, and the U.S. Geological Survey's Core Science Analytics and Synthesis program, led in Oak Ridge by Mike Frame.

One of the working groups involved in DataONE is the usability and assessment group, led by Frame and by Carol Tenopir of the University of Tennessee.

"We have the charge of making sure that the system and the materials meet the needs of our stakeholders," Tenopir said. "We increase our engagement with the scientific community when we are able to teach them the best ways of classifying and describing the data they collect."

Provided by Oak Ridge National Laboratory

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