

# Exploring the 2010 Naturally Illinois Expo

## First Floor

**1 Backyard Diversity—Insects of Illinois and Beyond** Insects are the most diverse group of organisms on the planet with more than 33,000 species recorded from Illinois. Learn about the amazing diversity of insects and their importance to the environment. (Room 196)

**2 Turtles of Illinois** Ever wonder which turtles could be in your neighborhood pond? Come see a few local turtles and play our turtle habitat matching game. Also, learn how we find and follow these turtles in the wild. (Room 196)

**3 What Happens to Your Electronic Waste? – Sustainable Electronics Initiative** Electronic waste—generated by computers, TVs, cameras, printers, and cell phones—is a growing global issue. Come see what can be done to prevent “e-waste” from going to landfills, and learn about refurbishing and reusing computers. (1<sup>st</sup> Floor Hall)

**4 Mussels of Illinois** Did you know that mussels are an important indicator of stream health? Learn about Illinois mussel species, their characteristics and habitat, and why many are threatened or endangered. Spend time searching for mussels in our streambed replica! (Room 171)

**5 The INHS Herbarium** A library for plants? Really? Come learn about our herbarium. (Main Foyer)

**6 INRS—Home of the Illinois State Scientific Surveys** Welcome to our home! Stop by and learn more about the five scientific divisions that make up our Institute. Our work on water, energy, minerals, ecosystems, climate, cultural resources, and technology supports sustainable economic development and natural and cultural resource management for Illinois. (Main Foyer)

**7 Illinois State Archaeological Survey—Recording, Preserving, and Interpreting the Past** The newly-created Illinois State Archaeological Survey is pleased to join the Institute of Natural Resource Sustainability at the University of Illinois. Our mission is the scientific study, preservation, and interpretation of Illinois’ rich archaeological heritage. (Main Foyer)

**8 INRS Libraries** Meet the librarians of INRS and find out how they can help you! Learn about resources and services available to the public. (Main Foyer)

**9 Publication Sales and Teacher Resources** Take a moment to browse or buy our most popular recent posters, maps, and publications. Field manuals; guides to Illinois’ insects, mammals, fossils, and rocks; Good Guy/Bad Guy insect cards; coloring posters; and games are just a few of the items. Enter our drawing to win a free publication. Teachers, we also have information for you about teacher workshops, curricula, posters, and other materials relevant to earth and environmental sciences. (Room 139)

**10 Minerals and Ancient Creatures** Fossils and minerals will be displayed at this station; come see the creatures that once crawled and lived in Illinois seas 300 to 470 million years ago and view beautiful crystals that formed deep in the crust of Illinois. (Room 123)

**11 Underground Cavern Display** View a simulated cave environment featuring stalagmites and stalactites. Internal illumination of one stalagmite—which started growing 80,000 years ago—reveals the abundant growth rings that tell the story of the geologic processes and climate changes that took place during its formation. (Northeast Entrance)

**12 Illinois Minerals** What are tripoli, galena, sphalerite, and peat? Where are they found in Illinois? What minerals are found in your county? Answer these questions about Illinois’ mineral resources and more. (Northeast Entrance)

**13 Groundwater: A Moving Experience** Watch our groundwater model demonstration to see how groundwater moves through the subsurface toward a pumping well. You’ll learn how earth materials of different grain sizes affect the movement of groundwater. You’ll also discover how surface contaminants can affect the quality of our water supply in east-central Illinois. (Room 101)

**14 Groundwater: Understanding the Mahomet Aquifer** See how computer modeling helps us understand the Mahomet aquifer—the primary source of water for hundreds of communities and cropland in east-central Illinois. You’ll discover how computer simulations are used to study the impacts of ever-increasing water withdrawals from the aquifer. (Room 101)

**15 Build Illinois** Geologists are storytellers! They read the rocks like pages in a book and recreate for your imagination the vanished landscapes of ancient Illinois. Hop into an imaginary time machine and head back through time in this wonderfully engaging demonstration of Illinois’ geologic history. (Room 101)



## EWF: Earth, Wind, and Fire 5K Run and 2.5K Walk

The race kicks off at 9:00 AM on Saturday, March 13. Registration is inside the Main Foyer. Race starting line is outside the Northeast Entrance of Natural Resources Building. Information about the event, registration form, and course map are available online at <http://www.inrs.illinois.edu/expo/5krun.shtml> or contact Don Luman, the race director, at 217-244-2179 or [dluman@igs.illinois.edu](mailto:dluman@igs.illinois.edu).

## Second Floor

**16 Microcritters: Dead and Alive** We project fossil images from a microscope to a large-format screen so you can see even the smallest details. We will examine organisms that lived in Illinois nearly 20,000 years ago during the last glaciations and compare them to their living counterparts collected from Kaufman Lake in west Champaign. (Room 261)

**17 Coordinated Hazard Assessment Mapping Program** Are you surprised to find that flooding causes more damage in Illinois than any other natural disaster? Learn about flood hazard maps that are now available in digital formats. You’ll also find out about the tools used to identify and estimate community risks from flooding. (Room 261)

**18 Geologic Time** The Earth is a very old and very dynamic place. It can be difficult to imagine just how old the Earth really is. This display illustrates part of the Earth’s history. Notice how the position of Illinois on the planet has changed throughout time. You’ll also see examples of animals and plants that lived in Illinois in the distant past. (2<sup>nd</sup> Floor Hall)

**19 Illinois Rivers Online** The Illinois Rivers Decision Support System provides high-quality information about the rivers and watersheds of Illinois. Use our Web site to learn about the watershed you live in and to search hundreds of selected Web pages for information on Illinois’ water resources. (2<sup>nd</sup> Floor Hall)

**20 Midwestern Regional Climate Center** The Midwestern Regional Climate Center maintains records of past weather data and climate information for the nine-state Midwest region. Discover how past weather data are used to answer questions from the general public, businesses, and government. You’ll also learn how this information is used to study climate changes and how weather affects our everyday activities. (Room 227)

**21 Fun with Gases, Liquids, and Solids** Join us for simple experiments in physical chemistry that show the characteristics of liquid nitrogen and the influence of sub-zero temperatures on certain gases. You’ll be able to observe sublimation and watch demonstrations of pressure and vacuum. (Room 223)

**22 Digital Topographic Map of Champaign County** High resolution elevation information produced from LiDAR (Light Detection And Ranging) data acquired in April 2008 has been used to produce a detailed topographic map of Champaign County. Because of the exceptional vertical and horizontal resolution afforded by LiDAR technology, previously unseen and unknown landform features are now apparent on this new topographic map. (2<sup>nd</sup> Floor Hall)

**23 Fun with Water Chemistry** See how much fun science can be! Join us for demonstrations and hands-on activities that highlight water chemistry. You’ll get to use indicators, test strips, and meters to study the pH of household substances; observe properties of supersaturated solutions; use polymers to make “slime.” (Room 211)

## Tent 1

**24 CoCoRaHS!** Let us tell you about our unique, nonprofit, community-based network of weather volunteers of all ages and backgrounds: The Community Collaborative Rain, Hail, and Snow Network (CoCoRaHS). Each day hundreds of CoCoRaHS volunteer observers throughout Illinois report rain, snow, and hail measured in their backyards. Anyone in Illinois can participate! Find out how you (or your family or school) can participate in one of the largest citizen-scientist programs in the country.

**25 Climate and Climate Change in Illinois** Climate change is an important topic these days. Ever wonder how the climate of Illinois has changed in the past, how it is changing now, and what might be in store for the future? Stop by and learn more about the climate of Illinois and how it impacts our lives.

**26 Fun with Weather** How cold, hot, or wet was it? Find out the area weather for any week of the past 20 years. We’ve got it all: from air temperature and rain to the amount of sunshine, the wind speed, and even the temperature of the soil. Get an idea about the kind of weather that might occur on your next birthday, a friend’s big event, or your grandparents’ anniversary.

**27 What’s in Our Rain?** Want to try your hand at being an environmental chemist? Find out about the quality of rainwater from locations across the United States. You’ll be able to test the pH of common household solutions and samples from the National Atmospheric Deposition Program. You’ll see how pH varies across the United States and how pH relates to local sources of air pollution.

**28 Monitoring Birds in Illinois** Do you know your bird songs? Do you know a hawk from an owl? Come and try out your bird tracking skills.

**29 Mud to Parks** Our scientists are leading this project that takes large amounts of sediment from clogged rivers and deposits it where it can be used as topsoil to restore landfills, industrial sites, habitat, and other areas.

**30 Biofuels—From Waste to Biodiesel** INRS scientists, along with UI students, are exploring ways to produce biodiesel from wastes, such as waste cooking oil. Learn about their work evaluating the performance of biodiesel under various conditions and researching ways to improve or innovate the process of biodiesel production.

**31 Biochar** Explore an innovative way to offset fossil fuel use and greenhouse gas emissions: using low-temperature heat in the absence of oxygen to convert waste biomass into valuable products. One of these products is biochar, which can be used as a fuel or as a soil amendment. Learn about biochar production, potential biochar benefits to agriculture, and possible environmental implications of biochar use.

**32 Building a Sustainable Energy System in Haiti with *Jatropha curcas*** INRS scientists are helping Haitians produce fuel from renewable resources, such as *Jatropha*, a flowering shrub that grows throughout Haiti. See how *Jatropha* can provide much needed energy and agricultural products for this region. Utilization of this plant can give Haiti a domestic fuel source with minimal environmental consequences.

**33 PPCPs, Emerging Contaminants in the Environment** You have probably read or heard on the news about antibiotics and drugs called pharmaceutical and personal care products (PPCPs). Their disposal is an emerging environmental issue in the U.S. Learn more about the sources of PPCP contaminants, methods to detect them, how we examine their fate and transport, and ways we can help decrease environmental contamination from PPCPs.

## Tent 2

**34 Kids Fossil Dig** Kids of all ages can dig for plant and animal fossils. Keep one of the fossils you find! Fossils range in age from 300 million to 480 million years old.

**35 Rocks, Bones, Pots, and People: What does it all mean?** What can archaeology tell us about the past? Check out the newly-created Illinois State Archaeological Survey exhibit and learn about how people lived in Illinois for the past 10,000 years.

## Greenhouse

**36 Glacial Geology of Illinois** See how the huge glaciers that repeatedly covered parts of Illinois during the ice age caused both erosion and deposition as the ice advanced and then retreated. Glacial deposits are the parent materials of Illinois’ richest soils.

**37 Sloth Says...Ice Age, WHAT?** This hands-on exhibit lets you learn about the materials deposited by glacial ice in Illinois. You can touch samples of “glaciers,” watch how water sorts sediment; examine till, striated rocks, and gravel containing erratic pebbles; and learn where to look in Illinois to find these materials.

**38 Corrosion Showcase** Hidden minerals in water cause scale. We have 45 examples of scale and corrosion to show you. Come see them and learn about the causes of the scale buildup in your pipes at home. You can do an experiment and watch the scale particles come out of solution.

**39 Illinois Wetlands: A Water Resource** Receive an introduction to Illinois wetlands and discover why they are important to us. The interactive demonstrations, including the “bog in a bucket,” will help you learn about wetlands without getting your feet wet. You’ll also see examples of wetland research studies conducted by INRS scientists.

**40 How Streams Work** Streams are fascinating! We don’t have a real stream, but we’ve got the next best thing. Our stream table functions just like a real stream. You’ll be able to experiment with stream dynamics and get a close-up view of how streams work and how they change. Be careful, or you might get a little wet!

## South Drive

**41 Drill Rig** See the type of rig we used to drill into the ground, extract sediment cores, and install the observation well located next to the rig. The borehole is 372 feet deep and penetrates the upper bedrock at 350 feet. See some of the drilling bits and sampling tubes we used to retrieve the 2.5-inch diameter cores. The well is used to monitor groundwater levels and to calibrate various geophysical probes.

**42 Get to the Core: Steamy Swamps and Ice Age Glaciers** During Expo 2009 we drilled and extracted a core of sediment from a borehole to a depth of 372 feet and installed a water level observation well. We bored through about 300 feet of glacial sediments, dating back to possibly one million years, which directly overlies shale and coal deposits older than 300 million years. View the entire core and learn how geologists have interpreted/reconstructed this location’s last 300+ million years of geologic history using this sediment core and other evidence. (Tent 3)

**43 Mining of Coal Resources in Illinois** Maps, photos, and a video will help you visualize the state’s coal resources and mining history. Take a few minutes to learn about one of Illinois’ most interesting and economically important resources. (Tent 3)

**44 Borehole Geophysics** Watch our excursion logging vehicle and probes during a well logging simulation. You’ll learn the “how and why” of geophysics and its many applications. Used by us as early as 1942 for groundwater applications, logging today supports a variety of research activities using more than 15 different probes at depths of up to 3,500 feet.

**45 Research off the Grid** Many environmental field monitoring sites are located in remote locations where electrical power is unavailable. This exhibit shows how solar panels and wind turbines are being used to power remote research sites in the National Atmospheric Deposition Program. Learn about these alternative energy sources from experts at Midstate Renewable Energy Services of Champaign, Illinois. They have provided solar and wind energy solutions for homes and small businesses in central Illinois since 1999.

**46 Illinois’ Petroleum Resources** Visit the traveling exhibit of the Illinois Petroleum Resource Board to see working models of oil field equipment. You’ll have a chance to learn about the importance of oil and gas in your daily life and increase your awareness of the science and business aspects of the Illinois oil and gas industry. For more information, visit the IPRB Web site: <http://iprb.org/>.

## CBP: The Campus Bike Project

The Campus Bike Project serves students, faculty, and staff who are looking for inexpensive, low maintenance, and environmentally friendly transportation—and don’t mind getting their hands dirty in the process. The Campus Bike Project provides a shared space for working on bicycles, learning from skilled volunteer mechanics, and sharing knowledge about bicycle commuting, bicycle safety, bicycle repair, and bicycle culture. (Garage)



