

Shawnee Trails

December 2022 - February 2023 QUARTERLY

http://www.sierraclub.org/illinois/shawnee



405-864-7619

Sierra Club – Shawnee Group

In This Issue:

Navigator CO₂ Pipeline Pg 1-2, 5-6 Winter Programs Pg 3

New Year's Day Stone Soup Pg 3

Winter Outings Pg 4 Pollinator Yards Pg 7

Contact Your Rep. Pg 7

Sierra T-Shirts for Sale Pg 8

Volunteer Pg 8

Alternative Gift Fair Pg 8

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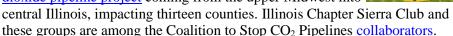
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CO₂ Capture & Sequestration: Navigator CO₂ Pipeline By Sabrina Hardenbergh

Sierra Club, Illinois Chapter Sierra Club and central Illinois Sierra Club groups are concerned about a pending carbon dioxide pipeline project coming from the upper Midwest into



Carbon dioxide (CO₂). In high school science class, we learned about the cycle of photosynthesis and cellular respiration, where carbon dioxide and water, with sunlight, made glucose and oxygen (6CO₂ + 6 H20 \rightarrow C6H12O6 + 6 O2, then reversing with use of the sugar). This function underlies the rationale for retaining and augmenting forests across the Earth to mitigate CO₂ emissions and related climate change. After class, we perhaps were amused by small amounts of dry ice (CO₂, as a solid, gassing) to create fog at Halloween haunted house events or party punch bowl escapades. Later in life, we possibly used dry ice assisted transport and storage of heat-sensitive food and medical products (e.g., cheese, some COVID vaccine shipments). Dry ice blasting is an industrial cleaning method. Thus, at one level, CO₂ may seem either "natural," "fun," "utilitarian" and "benign" (despite workplace warnings for its use).

During earlier lobbying on Illinois fracking legislation, we were concerned about the undisclosed chemicals the oil and gas industry uses in conventional stimulated oil drilling and high-volume hydraulic fracturing. Across the U.S. CO₂, is among many possible well stimulants in enhanced oil recovery (EOR) from depleted wells, something industry brushed off as benign or inconsequential, along with brushing off climate change. Yet, CO₂, methane, and nitrous oxide are primary greenhouse gas emissions that are of concern with climate change, where most CO₂ is generated from fossil fuel and industry. Acknowledging the problem at one level, the fossil fuel industry has promoted carbon capture and sequestration (CCS) as an important means of lowering CO₂, and our state and federal government has enacted legislation supporting CCS. Public Act 102-0341, the Carbon Capture, Utilization, and Storage Legislation Task Force Act, directed Prairie Research Institute at the University of Illinois at Urbana-Champaign, in consultation with an intergovernmental advisory committee, to submit a carbon capture, utilization, and storage report to the Governor and General Assembly by December 31, 2021. Yet, many believe that geological and technical means of CCS are just an expensive, tax payer financed prolongation of fossil fuel extraction, with hazardous transport and storage issues, and mounting climate change.

At the Los Angeles airport on October 31, 2022, a CO₂ fire extinguisher system malfunctioned, filling a utility room near a baggage claim area. Three contract workers escaped and received minor (Continued on Page 2) (Navigator CO₂ Pipeline, Continued from Page 2)

treatment. A fourth pipefitter went into cardiac arrest from oxygen displacement, had seizures once revived at the hospital, was placed into a medical coma, where he died a week-and-a-half later. CO₂ is among various chemical options for fire suppression, specifically because it displaces oxygen required to sustain fire while not causing electrocution (as with water); however, this comes with National Fire Protection Agency (NFPA), CDC/NIOSH, and OSHA asphyxiation warnings. The EPA documents a lengthy list of CO₂ fire suppression risks. NIOSH warnings for CO₂ also extend to confined areas with flue gas, fermentation (wine, beer, etc.), and CO₂ transportation.

The highly hazardous asphyxiating nature of concentrated CO₂ was alarmingly demonstrated during the liquified CO₂ pipeline blowout just after 7:00 pm, February 22, 2020, in Satartia, Mississippi, an environmental justice issue we likely didn't hear about when COVID pandemic news began to amplify. Within minutes, severe breathing problems and asphyxiation from CO₂ poisoning befell local residents and first responders without oxygen equipment. Combustion engine vehicles stalled. In the incident report, Denbury Gulf Coast Pipelines, LLC (Denbury), a subsidiary of Denbury Resources (now Denbury Inc. after filing for bankruptcy) disclosed 200 evacuated and 45 hospitalized, numbers less than reported by other sources. Denbury had other CO₂ pipeline leaks in 2010 and 2011, and on October 7, 2020 while reconnecting the pipeline. The pipeline failed with pressure from ground subsidence after heavy rain.



Over two years later, May 26, 2022, the US Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) announced its plan to do the following:

- initiate new rules to update CO₂ pipeline standards, including emergency preparedness, and response;
- issue a Notice of Probable Violation, Proposed Civil Penalty, and Proposed Compliance Order (NOPV) to Denbury Gulf Coast Pipeline, LLC for multiple federal violations with \$3,866,734 in penalties
- complete a failure investigation report for the 2020 pipeline failure in Satartia, Mississippi;
- issue an updated nationwide <u>advisory bulletin</u> to all pipeline operators underscoring the need to plan for and mitigate risks related to land-movements and geohazards that pose risks to pipeline integrity; and
- <u>solicit research</u> to increase safety of CO₂ pipelines.

The PHMSA violation notice, investigation report, and <u>advisory bulletin</u> are available on their website, concerning the many problems with CO₂. However, research is pending, and new gas, oil and hazardous liquid (including CO₂) <u>rule updates have only just been posted on November 17, 2022</u>. This rule applies to <u>supercritical CO₂</u> composed of 90 percent carbon dioxide molecules, not less regulated lower concentrations; apparently <u>PHMSA knows the rules are inadequate</u>. The <u>US Department of Energy immediately noted PHMSA</u>'s spring announcement, along with the <u>Bipartisan Infrastructure Law</u> providing nearly \$100 million for engineering and design of CO₂ transport infrastructure, and its \$2.1 billion loan program for infrastructure to transport CO₂ (captured from industrial facilities, power plants, and future direct air capture facilities) to permanent geologic storage. While California issued a <u>moratorium until further PHMSA rules are made</u>, and <u>Iowans want more rules</u>, CCS companies want the recent Inflation Reduction Act tax breaks and government money. Enter **Navigator CO₂ Ventures LLC** with its 5-state <u>CO₂ pipeline construction permit application</u> at the Illinois Commerce Commission (ICC) on July 25, 2022, wherein the ICC must act by July 25, 2023.

Navigator CO₂ Ventures, LLC (Navigator, originally a Texas-based company) is developed and managed by Navigator Energy Services (a company that facilitates oil and gas gathering, transmission, treating, processing, compression and storage from central Oklahoma and Midland, Texas to Houston). Navigator proposes to build the Heartland Greenway, a 1,300-mile CO₂ pipeline across South Dakota, Nebraska, Minnesota, Iowa, and west central Illinois, just south of Springfield, to underground storage sequestration in Christian County. In March 2021, Navigator partnered with BlackRock Global Energy and Power Infrastructure Fund III to develop the project, along with Valero Energy Corp. as the anchor customer. Corn-based ethanol biofuel refineries owned by Siouxland Ethanol LLC, Big River Resources, LLC, Big River United Energy, LLC and POET, plus fertilizer producer OCI, are now further (Continued on Page 5)

WINTER 2022/2023: SHAWNEE GROUP SIERRA CLUB MEMBER PROGRAMS

Note the mix of both in-person and Zoomed Shawnee Group member programs, following national Sierra Club directions, because of COVID precautions. Information for joining the online Zoom webinar meetings will be shared later by Shawnee Group email, website and Shawnee Group of the Sierra Club Facebook Page. Do also consider other Illinois Sierra groups' virtual presentations, as well as our own, listed on www.sctrips.org.

December 2022: There will be no December 2022 year-end program. Instead, we will celebrate the holidays with the revival of a Shawnee Group tradition, the New Year's Day Stone Soup Picnic. (See the event invitation below.)

Thursday, January 12, 2023, 7 – 8 pm

Presentation: The Great Horned Owls of Forest Park

Presenter: Naturalist Mark Glenshaw

Location: In-person at The Carbondale Township Hall, 217 E. Main Street, Carbondale Illinois. Access the meeting room through the backdoor. Plenty

of parking is available near this entrance. (Masks required)



Presentation: Natural Resource Damage Assessments & Restorations in Southern Illinois **Presenter:** Carson McNamara, Natural Resource Specialist, IDNR Contaminant Assessment

Location: Via Zoom. (Registration information and access to the Zoom link for this program will be shared by email and on our website event page, https://www.sierraclub.org/illinois/shawnee/events; scroll down to the spreadsheet at the very bottom, click open this event's title and fill out your name, email and info. The spreadsheet is also at www.sctrips.org.)

Thursday, March 9, 2023, 7 - 8 pm

Presentation: Increasing and Diversifying Carbondale's Trees: Past Present, Future

Presenter: Mark McDaniel Carbondale's Tree Arborist

Location: In-person at The Carbondale Township Hall, 217 E. Main Street, Carbondale Illinois. Access the meeting

room through the backdoor. Plenty of parking is available near this entrance. (Masks required)

Sierra Club 2023 WINTER OUTING

Shawnee Group Annual New Year's Day Stone Soup Picnic Sunday, January 1st, 2023, 11 a.m. – 3 p.m. at Shelter #2, Giant City State Park (This event replaces the December 8, 2022 program.)

Our annual decades-old winter tradition rekindled! Shawnee Chapter Sierra Club invites you to partake in the making and eating of vegetarian "stone soup" made in a pot over a camp stove. Free and open to all. Dress for the weather, and come around 11a.m. to contribute **precooked** ingredients to the vegetarian soup pot. Also **please bring a side dish to share, your own beverage, reusable soup bowl and eatware** to reduce disposables, **and a chair.**

The potluck lunch starts around noon. Take a hike in the park or congregate around the campfire and talk with others who love spending time outdoors. Musicians are invited to bring instruments, and parents and children are welcome.

If you'd like to volunteer for the Stone Soup Organizing Committee or have questions, contact: Carla Womack at crusso1957@yahoo.com, 815 263-8173, or Patty Weyhrich at pweyhrich711@hotmail.com.

Map of Giant City State Park, shelters are highlighted

in red: https://www2.illinois.gov/dnr/Parks/Documents/GiantCitySiteMap.pdf

Hope to see you there!

Stone Soup is a folk tale about the value of sharing in which a hungry traveler convinces the people of a town to each share a small amount of their food to make a meal for everyone to enjoy.



The CDC and IDPH still

indoors.

indicate that in many cases, if

ask, especially

you can't socially distance,

WINTER 2022/2023 – SHAWNEE GROUP SIERRA CLUB OUTINGS

Fountain Bluff & Pomona Natural Bridge Hike, Sunday, December 4, 2022, 10 am

Meet in the Murphysboro Hardees parking lot before 10 am. We will first visit 1,000-year-old native American **petroglyphs** at Fountain Bluff near Gorham and then go to beautiful Pomona natural bridge. Both hikes will be of mild difficulty and will be relatively short. If there is interest, we will stop at either Pomona Winery or Hickory Ridge Winery after the hikes. Wear appropriate hiking shoes. You must call Steve Eberhart at 618-967-8690 to participate.

Little Bear Creek Hike, Sunday, January 22, 2023

We will hike along beautiful Bear Creek, near Little Grand Canyon, seeing Stone Fort along the way. The hike will end at Pomona Winery. This will be a moderate hike of 4.5 miles. Meet at 7530 Hickory Ridge before 10 am. You must call Jon Womack at 815-263-9625 in order to attend the hike or to obtain further information.

Piney Creek Ravine Ecology Hike, Sunday, February 5, 2023, 11:00 am

Meet at 10:15 am to carpool from Murdale Shopping Center, Carbondale, OR at Piney Creek Ravine State Natural Area by 11 am. Piney Creek Ravine is an Illinois Nature Preserve with unique natural communities and prehistoric rock art. Hear about the diverse ecology, plants and animals found in the area as we walk the scenic moderately rugged 2-mile trail. Bring water and a snack if desired. **No pets allowed.** For questions or accommodations to participate, contact Kevin Rohling: krohling@illinois.edu or 618-695-3383 (office). **Registration is required**: https://web.extension.illinois.edu/registration/?RegistrationID=26733. Notification of cancellations due to weather or other issues will be sent via email a day or two in advance.

Ferne Clyffe Hike. Sunday, March 5, 2023

We will hike a moderate 4 miles at scenic Ferne Clyffe State Park. Meet at the Ferne Clyffe Lake parking lot before 10 am. Wear appropriate hiking shoes and bring water. You must call Bob Mulcahy at 618-942-6342 to participate.

Shawnee Bluffs Canopy Zipline Tour Outing, Sunday, April 16, 2023

We will be going to Illinois' first entirely tree-based, eco-friendly zip line canopy tour. Shawnee Bluffs features eight zip lines, the longest stretching more than 1,100 feet over a beautiful natural setting. The tour includes 11 platforms located high in trees, three aerial suspension bridges, and two short ground hikes. Meet in Carbondale's Murdale Shopping Center parking lot by the Murdale sign before 9 am, OR meet at Shawnee Bluffs at 9:30. The price is \$98/person. However, we will receive a 10% discount if enough people sign up. You must contact Steve by April 2 to reserve a place as part of the Shawnee Group. After that date, if any non-Sierra Club places for ziplining remain for the morning of April 16th, you may still be able to participate. But such openings cannot be assured. To sign up and obtain a reservation to participate in this outing, you must call Steve Eberhart at 618-967-8690 before April 2.

Visit our older Shawnee Group Sierra Club blog page, lower right side (Index), for a list of weblinks to local hiking trail descriptions, and directions for how to get there: https://shawneegroup.blogspot.com/

Service Outings - Help Save High Quality Natural Areas

Shawnee Group is committed to helping rid high-quality natural areas of non-native invasive plants (NNIS) that are threatening to crowd out our native plant communities at La-Rue Pine Hills Research Natural Area (Snake Road) and at Fern Rocks Nature Preserve (Trillium Trail) in Giant City State Park.

COVID-19 pandemic guidelines restrict group activities, but service outings will eventually occur again.

Please consult our web page <u>sierraclub.org/illinois/shawnee</u> or our Facebook Page (<u>Sierra Club Shawnee Group</u>) for further developments in 2023 or contact Barb at 618-549-9684, <u>babitaji@aol.com</u> or text 618-534-7440.

Piasa Palisades Group Outings Chair:

Carol Klinger, 618-288-5506, ciklinger@yahoo.com http://www.sierraclub.org/illinois/piasa-palisades

Eastern Missouri Group Outings Chair:

Doug Melville, 636-288-1055 douglas.k.melville@gmail.com http://sierraclub.org/missouri/eastern-missouri

Future Outings TBA:

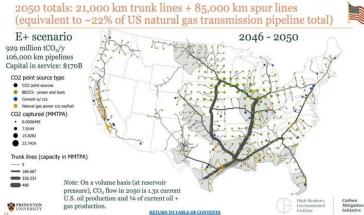
Updates listed on our or Illinois Chapter websites: http://www.sierraclub.org/illinois/shawnee
https://www.sierraclub.org/illinois/events-calendar
Other short notice outings and events may be announced on our Facebook page:
https://www.facebook.com/SierraClubShawnee

(Navigator CO₂ Pipeline, Continued from Page 2)

customers or partners. Biofuel company POET, with many <u>byproducts</u> (<u>dry ice, alcohol, hand sanitizer, animal feed, distiller's corn oil for renewable diesel production</u>), currently has a fleet of trailers for <u>cryogenic hauling</u> of liquid CO₂, as well as other trailers for bioethanol and other fuels. Navigator's Heartland Greenway project claims it will provide biofuel producers and other rural industrial processors in five the Midwest states a means to reduce their carbon footprint, capturing their excess CO₂ and transporting it with their pipeline to the sequestration site. Two effected Illinois counties (Henry and Knox) will also be impacted by <u>ADM/Wolf Carbon Solution's</u> proposed 300-mile CO₂ pipeline that will serve ethanol and fertilizer plants. ADM already has a CO₂ injection site deep in the Mt. Simon sandstone by its plant in <u>Macon County</u>, <u>Decatur</u>, <u>IL</u>, a site injected in 2011 and monitored since 2009.

CO₂ capture and sequestration is in the works across Illinois, although many sites do not involve interstate pipelines. Midwest Regional Carbon Initiative (MRCI) has CCS projects, including the abovementioned ADM site at Decatur, and an EOR test well near Vandalia, IL. Major geological sequestration options being considered include CO₂ sequestration in depleted oil and gas fields, deep saline formations, deep basalt formations and deep unmineable coal seams. CO₂ is captured from an industrial source, such as steel or cement production, or an energy-related source, like a power plant or natural gas processing facility, and injected into porous rocks for long-term storage. Prairie Research Institute (PRI), at the University of Illinois Urbana-Champaign, does applied research on capture, use, and storage of CO₂ from power plants and industrial operations. PRI deems Illinois geology as ideal to store 12 billion to 172 billion metric tons of CO₂ under our Mt. Simon Sandstone sedimentary rock spanning the Illinois Basin region, which covers most of Illinois, southwestern Indiana and western Kentucky. In 2020, the Illinois State Geological Survey was awarded a Phase 3 CarbonSAFE CO₂ permitting project: the Illinois Storage Corridor (ISC), which includes the Prairie State Generating Company (coal-fired power plant) site by Marissa, IL. Earlier Phase 1 and Phase 2 CarbonSAFE geological CO₂ storage feasibility projects in Illinois include sites in the abovementioned Macon and Christian counties, and Wabash region (includes Wabash Valley Resources plant by Terra Haute, for Petcoke to

Syngas to hydrogen to ammonia fertilizer and CO₂ production, maximizing CO₂ recovery for storage or EOR sale, as well as <u>hydrogen</u> production). Many more <u>CarbonSAFE</u> projects have occurred across our country. CCS projects have explored <u>risk mitigation for geologic carbon sequestration</u> such as <u>seismic</u>, <u>geological fissures</u>, <u>well integrity</u>, and other issues (implying awareness of these risks). Recall our concern for Wabash Fault seismic impact for water injection wells in our oil fields. Other projects explore how CO₂ can be used to make <u>fuels</u>, <u>plastics</u>, <u>building materials</u> or other products, including <u>graphene</u>, a <u>strong carbon film</u> used in electronics screens and other products, thus **technically** sequestering CO₂.



An oil industry funded <u>Princeton University</u> <u>Net-Zero America</u> study envisions a 65,000-mile system of CO₂ pipelines by 2050, networked across the United States, including through southern Illinois. Their five CCS scenarios to achieve net-zero climate changing temperature by 2050, are high electrification (E+), less high electrification (E-), high biomass (E- B+), renewable constrained (E+RE-), and 100% renewable (E+RE+). The Coalition to Stop CO₂ Pipelines would align closer to the E+RE+ scenario, but sooner, more like many (*Continued on Page 6*)

	REF ~AEO 2019	E+ high electrification	E- less-high electrification	E- B+ high biomass	E+ RE- renewable constrained	E+ RE+ 100% renewable
CO ₂ emissions target		- 0.17 GtCO ₂ in 2050				
Electrification	Low	High	Less high	Less high	High	High
Wind/solar annual build	n/a	10%/y growth limit	10%/y growth limit	10%/y growth limit	Recent GW/y limit	10%/y growth limit
Existing nuclear	50% → 80-y life	50% → 80-y life	50% → 80-y life	50% → 80-y life	50% → 80-y life	Retire @ 60 years
New nuclear	Disallow in CA	Disallow in CA	Disallow in CA	Disallow in CA	Disallow in CA	Disallowed
Fossil fuel use	Allow	Allow	Allow	Allow	Allow	None by 2050
Maximum CO ₂ storage	n/a	1.8 Gt/y in 2050	1.8 Gt/y in 2050	1.8 Gt/y in 2050	3 Gt/y in 2050	Not allowed
Biomass supply limit	n/a	13 EJ/y by 2050 (0.7 Gt/y biomass) [No new land converted to bioenergy]		23 EJ/y by 2050 (1.3 Gt/y biomass)	13 EJ/y by 2050 (0.7 Gt/y biomass) [No new land converted to bioenergy]	

PRINCETON UNIVERSITY

(Navigator CO₂ Pipeline, Continued from Page 5)

<u>IPCC climate change mitigation recommendations for 2030</u>. The fossil fuel, related chemical and Big-Ag industry falls in the other scenarios, and REF "business as usual" category. Our state and federal legislation and infrastructure support spreads across these other scenarios too, including support for geological and technical CCS with pipelines.

An element of climate change mitigation is how fast can biological CO₂ sequestration occur, and by what protocols, versus geological and technical CCS (which may not count all energy and CO₂ inputs in its analysis). IPCC climate change mitigation recommendations for 2030 note greatest impact with wind and solar energy use and forest and agricultural means for carbon sequestration, versus more expensive geological and technical CCS methods with less change. Yet more efficient industrial systems that recycle chemical byproducts as feedstock should be utilized. The UCDavis CLEAR Center notes that oceans absorb about 25% of CO₂, more in colder water, although increasing carbon sequestration leads to acidification that harms marine life. Carbon is sequestered as soil organic carbon by plants through photosynthesis, while carbonates are created over thousands of years when CO₂ dissolves in water and percolates the soil, combining with calcium and magnesium minerals, forming "caliche" in desert and arid soil.

Forests and grasslands absorb about 25% of carbon emissions. Key terrestrial CO₂ sequestration includes conversion of marginal lands to forests, soil conservation practices in grazing and eroded lands, low- or no-till agriculture, and restoration of degraded mine lands with cover crops and other practices, which increases agricultural productivity.

Finally, CO₂ is not only a greenhouse gas emission and asphyxiant hazard, but it is a risk in other ways. When CO₂ mixes with water, it doesn't just become a carbonated beverage. Instead, <u>carbonic acid</u> may form and erode pipelines leading to a CO₂ rupture; hence, PHMSA advises on earthquakes, subsidence, flooding, and other weather factors with pipelines. Or <u>CO₂ may leach heavy metals</u> from the rocks into a watershed near a CO₂ storage site, that <u>contaminate</u> <u>drinking water</u>. The proposed pipeline and sequestration site is in the Sangamon Valley Watershed, so Sangamon County (Springfield, IL) has intervened in the ICC permit. Farmers livestock and crops are also impacted.

From these examples, we can see that some forms of CCS are less hazardous than others. CO₂ pipelines of any length to geological sequestration and EOR sites have <u>hazards and costs that require much better regulation</u>, better EIS, better emergency management, and maybe no permit at all.

Concerned Illinois residents can sign up with the Coalition to Stop Illinois Pipelines to follow the CO₂ pipeline issue, sign a petition, and/or submit a public comment concerning the pending Navigator CO₂ pipeline permit being reviewed by the <u>Illinois Commerce Commission (ICC)</u>. On the ICC public comment website, one can review other public comments to see how your concerns compare, and click the service list and documents links for more information. Public comments should be framed by the appropriate entities around the categories of CO₂ pipeline effects listed in 220 ILCS 75 - Carbon Dioxide Transportation and Sequestration Act that our Illinois state legislature passed in 2012, during our earlier coal and oil industry issues. Per 220 ILCS 75, the Commission considers evidence of the pipeline's effect 1) "upon the economy, infrastructure, and public safety presented by local governmental units that will be affected by the proposed pipeline route" (i.e., have your county board or other local government unit intervene at the ICC), 2) "upon property values presented by property owners who will be affected by the proposed pipeline or facility, provided that the Commission need not hear evidence as to the actual valuation of property such as that as would be presented to and determined by the courts under the Eminent Domain Act," or 3) how the pipeline is "consistent with the public interest, public benefit and legislative purpose" of 220 ILCS 75. Contact county road commissioners, as they are in a decision-making position that individual citizens do not have with eminent domain, since putting the CO₂ pipeline under public roads requires a public utility permit. Make sure county government promptly updates their utility road crossing permitting process to evaluate the safety hazards of CO₂ pipelines. Keep these parameters in mind for any future CO₂ pipeline proposals, given the envisioned infrastructure network.

The Coalition to Stop CO₂ Pipelines talking points (Illinois Chapter Sierra Club is a member):

- 1. CO₂ Pipelines Aren't Safe
- 2. Eminent Domain Supersedes Landowner Rights
- 3. Pipeline Construction Damages Topsoil and Reduces Crop Yield
- **4.** Few Regulations Exist for CO₂ Pipelines
- 5. Pipelines Extend the Life of Fossil Fuel Use
- **6.** CO₂ Pipelines Are Funded by the Taxpayer
- 7. For Landowners, It's All Risk and No Reward
- 8. CCS Hasn't Worked



Pollinator Yards Pilot Program: A call for ideas on pollinator yards (see below) is part of the recent steps the City of Carbondale has been taking to ramp up its resilience and sustainability, particularly following the City Council's April 2022 approval of Carbondale's comprehensive, equity-based Sustainability Action Plan (SAP, <a href="https://www.explorecarbondale.com/DocumentCenter/View/7451/Sustainability-Action-Plan-PDF?bidId="https://www.explorecarbondale.com/DocumentCenter/View/7451/Sustainability-Action-Plan-PDF?bidId="https://www.explorecarbondale.com/DocumentCenter/View/7451/Sustainability Coordinator, whose position designates that 50% of her time be devoted to implementing the Action Plan.

To learn about the kinds of pollinator garden features and requirements other resilience-minded cities are pursuing, you may find the example of Coon Rapids helpful: https://www.coonrapidsmn.gov/1367/Protecting-Pollinators



Illinois Legislative Contacts: CALL YOUR LEGISLATORS TODAY!

State Dist. 109 – Adam Niemerg: 618-813-6036; 217-782-2087; niemerg@ilhousegop.org

State Dist. 115 – Paul Jacobs: 618-534-9880; 217-782-0387; Jacobs@ilhousegop.org

State Dist. 116 – David Riess: 618-282-7284; 217-782-1018; friess@housegop.org

State Dist. 117 – David Severin: 618-440-5090; 217-782-1051; www.ilhousegop.org/contactseverin

State Dist. 118 - Patrick Windhorst: 618-294-8703; 217-782-5131; www.ilhousegop.org/windhorst contact

Senate Dist. 55 – Senator Darren Bailey: 618-665-4109; 217-782-6674

Senate Dist. 58 – Senator Terri Bryant: 618-684-1100; 217-782-8137; Sec'y.: <u>cbrown@sgop.ilga.gov</u>

Senate Dist. 59 – Senator Dale Fowler: 618-294-8951; 217-782-5509; senatorfowler59@gmail.com

Governor J.B. Pritzker: 217-782-6830; https://www2.illinois.gov/sites/gov/contactus/Pages/default/aspx

Speaker of the House Emanuel Chris Welch: 217-782-8120; 708-450-1000; repwelch@emanuelchriswelch.com

Senate President Don Harmon: 217-782-8176; 708-848-2002; http://www.donharmon.org/contact-senator-harmon

Congressional Contacts: CALL YOUR CONGRESSMEN TODAY!

Senator Dick Durbin: 618-351-1122; 202-224-2152; http://www.durbin.senate.gov Senator L. Tammy Duckworth: 202-224-2854; https://www.duckworth.senate.gov Representative Mike Bost: 618-457-5787; 202-225-5661; https://bost.house.gov

Representative Mary Miller: 618-240-3155; 202-225-5271; https://marymiller.house.gov

President Joseph R. Biden, The White House, 1600 Pennsylvania Ave., Washington, D.C.

202-456-1111; https://www.whitehouse.gov/contact

Has Your Email Address Changed?

To receive notification when the latest Shawnee Group newsletter is posted online, be sure to inform the Group when you change your email address. Send email address updates to: crusso1957@yahoo.com.

Read current and past newsletters on our website: http://www.sierraclub.org/illinois/shawnee. The website also lists information on upcoming local programs and outings, plus state and national Sierra Club issues.

Leadership Opportunities

Run for the Board! We need a few good women and men. Join the board of directors (the executive committee, also known as the ExCom) in overseeing the Shawnee Group's strategic direction and economic health. Board members meet monthly for about 2 hours. Board terms are for two years. We are always interested in potential candidates. Contact Jane Cogie, 618-549-4673, jane.cogie@gmail.com.

Call for articles and photographs for Shawnee Trails! The next issue will be published in November. Please send your Word, PDF or JPG files to sabrina@midwest.net by Monday, February 6th.



Alternative Gift Fair

The Shawnee Group of the Sierra Club will again be one of the non-profit organizations involved with the Alternative Gift Fair. The event is at the Carbondale Civic Center, Sunday, December 4, 2022, and will run from 2:00 - 5:00 p.m. We will have a table with beautiful 2023 Sierra Club calendars for sale. The wall calendars are \$15.00 each (cash or check only please). The organizers are strongly encouraging wearing masks for those who attend. Hope to see you all at this wonderful community event!

Shawnee Group Sierra Club T-Shirts for Sale!

Show your support for our local group's activities. Contact Mike Covell at 618-201-4928 or emike@siu.edu.

White logo on blue T-Shirt \$15 Medium Large or X-Large

2023 Sierra Club Calendar Sale! Contact Barb McKasson, 618-549-9684,

