

MONTHLY NEWS REVIEW

Vol. 2, Issue 6, June 2002

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Monthly News Review is prepared by the Oklahoma Climatological Survey. Its purpose is to provide a summary of weather and climate news or related issues that may help guide policy-makers in the Oklahoma Weather Center. Along with weather, climate, environmental, and science issues, the review includes issues on the national and state agendas and events that affect major businesses in Oklahoma that bear some relation to demands for weather-related information. The summaries and any opinions expressed herein are those of the author, and in no way reflect positions of the Oklahoma Climatological Survey or the University of Oklahoma.

NATIONAL

Farm Bill signed (AP/Oklahoman 5/14/2002) – On May 13, President Bush signed into law the Farm Bill. The Bill brings to an end the “Freedom to Farm” program that was passed in the 1990s, but never fully implemented due to annual bailouts appropriated by Congress. The bill provides new price guarantees for major commodities, including wheat, corn, soybean, cotton, rice and oats. The farm bill also moves Peanuts from a quota system to a price-guarantee system, which is expected to have serious negative impacts on Oklahoma’s peanut farmers. The bill also includes substantial funding for conservation programs, including \$9 billion to help producers meet environmental regulations, and \$275 million to repair aging watershed dams, many of which are located in Oklahoma [funding inserted by Rep. Frank Lucas (R-Cheyenne)]. Critics say the target prices set in the farm bill are too high and will stimulate more production of crops that are already in surplus. Critics also say that the tradeoffs were made to gain political support in key Southern states that will play an important balance in the upcoming 2002 fall elections. The President’s support contrasts with earlier statements that such subsidies would encourage overproduction and distort the economy.

House Appropriations Committee approves OG&E ice storm assistance (Oklahoman 5/16/2002) – The U.S. House Appropriations Committee approved \$23.3 million in federal assistance to OG&E for recovery from the January 2002 ice storm. OG&E estimates total losses at about \$140 million. Rep. Ernest Istook (R-Warr Acres) had requested \$43 million, but was pleased to get the allotted amount. Historically, investor-owned utilities have not been eligible for federal assistance, but Congressionally-approved assistance to utilities following a devastating ice storm in New England in 1998 set a precedent. FEMA had earlier denied OG&E’s request for assistance. The measure, part of a bill on defense and homeland security, heads to the full House for a vote by late May. A hearing for OG&E’s rate-increase request was delayed until September in order to include the federal assistance as an offset.

Status of Legislation:

- Energy Bill (“Securing America’s Future Energy Act of 2001”; H.R. 4) Senate adopted with amendment (in lieu of their version, S.517); sent to House requesting conference committee on 5/2/2002.
- “Strengthening Science at the Environmental Protection Agency Act” (H.R. 64) passed House by voice vote on 4/30/2002; referred to Senate Committee on Environment and Public Works. Bill states that conduction, sponsoring, and evaluating environmental science and technology research shall be a central mission of the EPA with appointment of a Deputy Administrator for Science and Technology.
- “Brownfields Redevelopment Enhancement Act” (H.R. 2941) passed House by voice vote on 6/4/2002; referred to Senate Banking, Housing, and Urban Affairs Committee. Bill provides grants to eligible public entities and Indian tribes to assist environmental cleanup, including mine-scarred lands; appropriations for FY 2003-2007. Earlier related Senate Bill (S.350) passed 99-0 on 4/25/2001 and sent to House, but sits in Transportation and Infrastructure committee with no action since 6/28/2001.
- National Science Foundation Authorization (H.R. 4664) – passed House 6/5/2002; referred to Senate Committee on Health, Education, Labor, and Pensions. Appropriates \$5.5 billion FY 2003, \$6.3 billion FY04, \$7.3 billion FY05.

AGENCY NEWS

Corps postpones cuts (Oklahoman 5/5/2002) – The Army Corps of Engineers announced it would delay its cuts-cutting proposals in the Tulsa district until October, when the budget situation will be settled. The delay comes at the urging of Rep. Wes Watkins (R-Stillwater).

Hog farm rules endorsed by state legislature (Oklahoman 5/8/2002) – The state legislature endorsed the Oklahoma Water Resources Board's definition of what constitutes a recreational area when considering whether such facilities are within three miles of planned hog farm operations. State law provides that hog farms must be located at least three miles from any recreational facilities. The new legislation elaborates that OWRB should consider things like permanent fixtures and public access, supporting criteria used in an earlier decision.

CORE names new president (OceanSpace 5/29/2002) – The Consortium for Oceanographic Research and Education (CORE), one of the most effective organizations in the ocean community, named Rear Admiral Richard West to be president of the organization. West will assume his new duties at the end of July, following his retirement from the Navy. West will seek to advance CORE's scientific and educational priorities in Washington, including implementation of an integrated ocean observing system. Former presidents of CORE include Vice Admiral Conrad Lautenbacher Jr., who earlier this year became administrator of NOAA, and Admiral James Watkins who is currently chair of the U.S. Commission on Ocean Policy.

<http://www.oceanspace.net/index.cfm?issue=181>

NASA partnerships to make climate simulations more accessible (NASA 5/9/2002) – NASA announced new partnerships with eleven investigation teams that will enable software development and simulations of natural phenomena and interpret vast quantities of observational data. The \$22.8 million partnerships, over 3 years, include climate and weather modeling, multi-year earthquake forecasts, space weather predictions, and gamma-ray bursts. The National Center for Atmospheric Research (NCAR), the Massachusetts Institute of Technology, and NASA Goddard, in the "Earth System Modeling Framework," will develop a prototype software infrastructure that will provide a common means of assimilating data into the most widely used climate and weather models. The goal is to decrease the necessity of software development among the modeling community.

<http://www.gsfc.nasa.gov/news-release/releases/2002/02-71.htm>

FLAMBE system helps monitor fires, air pollution (NASA 5/28/2002) – Several federal agencies, including the U.S. Navy, NASA, and NOAA, teamed with universities to develop the Fire Locating and Monitoring of Burning Emissions (FLAMBE). FLAMBE uses geostationary satellite data, sampled every thirty minutes, to monitor forest fire development across the entire Western Hemisphere. The data is then coupled with an aerosol model, developed by the U.S. Naval Research Laboratory, to predict downwind concentrations of smoke and haze. Products are provided by the University of Wisconsin-Madison (see <http://cimss.ssec.wisc.edu/goes/burn/wfabba.html>).

<http://www.gsfc.nasa.gov/news-release/releases/2002/h02-77.htm>

STATE / LOCAL

Critics say little to show for 2002 legislative session (Oklahoman 5/25/2002) – The House and Senate adjourned on May 24, one week early this year, leaving some major issues unresolved. Each chamber passed a congressional redistricting plan, but in the end there was no consensus between each chamber and the governor. The issue was left to the courts. Tax reform, highlighted as an important issue for Oklahoma’s economic growth, was left virtually untouched, buried beneath concerns of shrinking state budgets. The state legislature did pass appropriation bills that were in line with earlier pronouncements. The Education Department was cut 1.6% and the Department of Human Services cut by 1.3%, much less than many other smaller agencies faced. Some agencies have been forced to furlough employees for 1-3 days in order to balance the FY02 (current year) budget. At the beginning of the session, both legislative leaders and the governor stated that protecting health, education, and public safety (corrections) were priorities in this year’s budget cycle. The state was able to weather this year’s lean budget by tapping \$170 million from the rainy day fund. Leaders are hopeful for an economic rebound that will allow restoration of some cuts next year.

Oklahoma judge approves redistricting plan (Oklahoman 5/29/2002) – After a tentative deal fell through in early May, the decision on Oklahoma’s new Congressional districts was left to the courts to decide. The deal, between the governor and Democratic legislative leaders, would have put J.C. Watts and Ernest Istook in the same district, representing Oklahoma and Cleveland counties. The third district, covering southern Oklahoma along the Red River, would have been an open seat. The plan failed in the legislature, and at the end of the session each body passed their own proposal – a separate one each for the House, Senate and governor. Oklahoma County District Judge Vicki Robertson ruled Governor Keating’s plan as “best for Oklahoma.” The Governor’s plan splits fewer counties and municipalities and retains more voters in their 1990 districts than either of the other plans submitted for her consideration. Democrats are planning an appeal. The three-day filing period for offices begins July 8. The governor’s plan is posted on the web at: <http://www.governor.state.ok.us/redist528.jpg>.

Oklahoma school funding authorized (Oklahoman 5/17/2002) – Despite a tight fiscal budget, common education will receive an appropriation of \$2.036 billion, up 0.1% from last year’s budget. \$33.6 million of the budget is directed toward teacher health benefits authorized by previous legislation; if that is discounted the budget amounts to a 1.6% net decrease from the previous year. An additional \$158 million is designated for a \$3,000 pay raise that was enacted in the 2000 legislative session. Textbook funding remains unchanged at \$33 million. According to Senator Cal Hobson (D-Lexington), the budget was designed to shield school classrooms, especially textbooks, from budget cuts. Hobson also noted recent improvement in tax collections and energy prices that may lead to a more optimistic scenario next year.

Oklahoma rig counts up (Oklahoman 5/18/2002) – Drilling rig counts increased over the past month, lending some hope for renewed energy growth in Oklahoma. A combination of higher energy prices and lower service-company costs contributed to the growth. At this time last year, service-company costs had spiked in response to the late-2000 surge in energy prices and drilling demands. As demand fell, so did service-company costs. The increased drilling is a positive sign for state tax revenue, which suffered from a drop in energy revenues this past fiscal year.

Incentives packages passed, despite tight fiscal year (Oklahoman 5/21/2002; 5/23/2002) – Despite having to scramble for dollars to fund common education, health care, and prisons, the state legislature was solidly in favor of providing tax and other incentives for businesses in Oklahoma. Among the incentives handed out:

- \$4.5 million over three years in transferable tax credits for wind turbine manufacturers (of which Bergey Wind Company in Norman is the only presently qualified company);
- \$41 million in bond issues for tire manufacturers to expand their facilities, offset slightly by a requirement to cede other present tax credits;
- \$9 million for Great Plains Airlines, based in Tulsa, to purchase additional aircraft.

River flow reduced at I-40 bridge collapse (Oklahoman 5/27/2002) – The U.S. Army Corps of Engineers shut down water release from Fort Gibson, Oologah, and Tenkiller lakes and reduced the flow from Grand, Hudson, and Keystone lakes. The flow at the time of the barge accident was 54,000 cubic feet per second (cfs), slightly below the seasonal normal flow of 60,000 – 75,000 cfs. Immediately after the accident, the Corps reduced flow to the river, dropping the flow to 40,000 cfs by 3 p.m. that afternoon. The reduced flows reduced the speed of the current, which reduced turbulence and improved visibility in the water. Water takes about two days to travel from Keystone Lake to the Webbers Falls site. [Note: Derek Arndt's ticker story on 5/28 noted flooding concerns due to heavy rainfall in the basin with reduced outflow.]

Two Oklahoma tribes loosen ties with BIA (Oklahoman 5/1/2002) – The Seminole Nation and Cherokee Nation have moved toward new constitutions that would provide more autonomy from the Bureau of Indian Affairs. The Seminole Nation approved the new constitution, while the Cherokee Nation's action is pending. These actions are part of a larger trend toward sovereignty, but some argue the actions are related to recent cutbacks in federal funding. It is not clear how such move may affect tribal entities' ability to compete for federal grants.

OSU President Halligan retires (Oklahoman 5/30/2002) – Oklahoma State University James Halligan announced his plans to retire within the next six to eight months. Halligan will stay on at OSU until a successor is hired. Halligan, 65, will remain at OSU and focus on the bioterrorism research project. Under his leadership, OSU garnered nearly \$400 million in improvements, increased student retention, and guided OSU through the aftermath of the basketball team's plane crash. Harry Birdwell, vice president of business and external relations, said of Halligan: "When you find some leader who can control his hat size, his shoes may be impossible to fill." Among the names being mentioned as a possible successor is Rep. Wes Watkins, who earlier this year announced his retirement from Congress.

Claremore farmers win state science title (Oklahoman 4/30/2002) – The Claremore FFA chapter won first place in the statewide Envirothon contest, sponsored by the National Resources Conservation Service and will compete in nationals in early August. Typically, schools send teams composed of their best scientists, but Claremore High School proved there is a lot of science in agriculture. "We're just now getting recognized as teaching a lot of science, but we've been doing it all along," said Rodney Arthur, leader of the Claremore FFA chapter. The students have shown that when applying science to the natural world, farmers can easily outperform the top biology and chemistry students in the school.

BUSINESS / TECHNOLOGY

Williams makes new ethanol marketing agreement (Oklahoman 5/28/2002) – Williams Bio-Energy announced an agreement with Glacial Lakes Energy LLC, based in Watertown, SD, to market 40 million gallons per year of ethanol. This brings Williams' ethanol marketing agreements to 450 million gallons annually. Ethanol-blended fuels account for 12% of all automotive fuels sold in the United States, and is growing due to phase-out of the gasoline additive MTBE. The renewable-fuels standard in the new energy bill is also likely to spur increases in ethanol use, perhaps tripling use within ten years.

OKC uses biodiesel fuel (Oklahoman 5/11/2002) – During the Eight National Clean Cities Conference and Expo, Oklahoma switched to a mix of biofuels for its trolleys and two busses. The mix is 20 percent soybean oil and 80% regular diesel, a blend called "B20." The blend reduces exhaust soot by 25% and ozone by 30%. Biofuels typically cost 15-20 cents per gallon more than conventional diesel fuels. Oklahoma City used the fuel, donated by World Energy Alternatives for the conference, on a test basis. Several other major cities have switched to blends such as B20, and OG&E and Tinker Air Force Base use blends in several fleet vehicles.

Continental to start flights to New York (Oklahoman 5/10/2002) – Continental Airlines will begin two daily nonstop flights from Oklahoma City to Newark International Airport, beginning November 1. From Newark, commuters can board a train to Penn Station in midtown Manhattan. Flights will be on new Embraer ERJ-145 Express Jets, which seat 50 passengers. The route is expected to help business travel to Oklahoma City, because business executives will not have to deal with layovers or small commuter flights. Oklahoma City Mayor Kirk Humphreys is hopeful that Continental's nonstop flights to New York will encourage nonstop flights to other major cities.

Norman Business Park to get latest SBC communications technology (Oklahoman 5/4/2002) – The Norman Business Park, located along Highway 9 in East Norman, will be the recipient of a \$30 million investment by SBC Southwestern Bell in an expansion of its high-speed data services. The new fiber will allow access to streaming video, videoconferencing, and high-speed Internet. Two companies, Boise Cascade and ServiceZone, are currently located in the park. Don Wood, executive director of the Norman Economic Development Coalition, said talks are ongoing with three prospects, including a local technology company.

Tulsa, Oklahoma City among best places to do business (Oklahoman 5/10/2002) – The annual Forbes/Milken Institute study of the best places to do business placed Tulsa at 59th nationally and Oklahoma City at 84th. Their respective ratings last year were 101st and 82nd. Tulsa's big gain came in "job momentum", a new criterion designed to track recovery from the recession. The lower ratings for both cities are due largely to Oklahoma's lag in technology sectors, which drives the index. On the other hand, it did not suffer from the tech bubble burst. San Jose, last year's number-one ranked city, fell to 61st this year. San Diego is the new top-ranked city.

WEATHER

Warm and dry conditions continue in much of U.S. (NOAA 5/16/2002) – Warm, dry conditions, extending back through the past winter, continued in April across much of the U.S. Many states in the Great Lakes and New England regions set the mark for warmest November-April since record-keeping began in 1895 (*see chart below this section*). Rainfall eased drought conditions slightly from Virginia northward along the Eastern seaboard, but not enough to end the drought, which has been marked as the most severe since the mid-1960s for the region. Dry conditions continued in the southeast and across the Rocky Mountains, where water supply issues and wildfires promise to be prominent this summer. Colorado experienced its driest October-April period on record, and Montana remains mired in a 4-year long drought. Nationally, April 2002 ranked as the 9th warmest on record, and 2nd warmest on record globally.
<http://www.noaanews.noaa.gov/stories/s909.htm>

Bartlesville water concerns drive long-term solution (Oklahoman 5/4/2002) – With Lake Hulah on the verge of oxygen depletion and related fish kills due to low water levels, Bartlesville’s City Manager has sought a long-term contract to access water from Copan Lake. The city has been drawing water from Copan Lake on an emergency basis, but needs a permanent solution by the time the authorization expires on July 21. The emergency contract provides Bartlesville with a rate of \$2.73 per acre-foot, the same as it pays for water from Hulah Lake. In contrast, the town of Copan pays \$52.53 per acre-foot. Water rates can only be modified by an act of Congress, except for emergency conditions. [Note: the immediate concerns were lifted when a single event on May 7 filled Hulah Lake to above-normal levels. The lake had been four feet below normal, but rainfall amounts of over three inches right over the watershed raised lake levels by five feet.]

Wheat acreage smallest since 1917 (AP 5/11/2002) – The USDA wheat harvest forecast of 30.2 million acres is the lowest since 1917, slightly below the 30.3 million acres harvested at the nadir of the 1930s dust bowl. However, less acreage does not necessarily translate to less wheat. The 1917 harvest yielded an average of less than 15 bushels per acre, making a total crop of 390 million bushels. With comparable acreage today, the yield is projected to be 1.3 billion acres, or about 43 bushels per acre (the peak was 48 bushels per acre in 1999). Wheat acreage has been falling steadily since the 1996 Freedom to Farm Act, which encouraged farmers to switch to other crops, such as soybeans and corn, which offered higher prices and/or subsidies. The lower production will not immediately translate to higher prices, due to large global stocks of wheat.

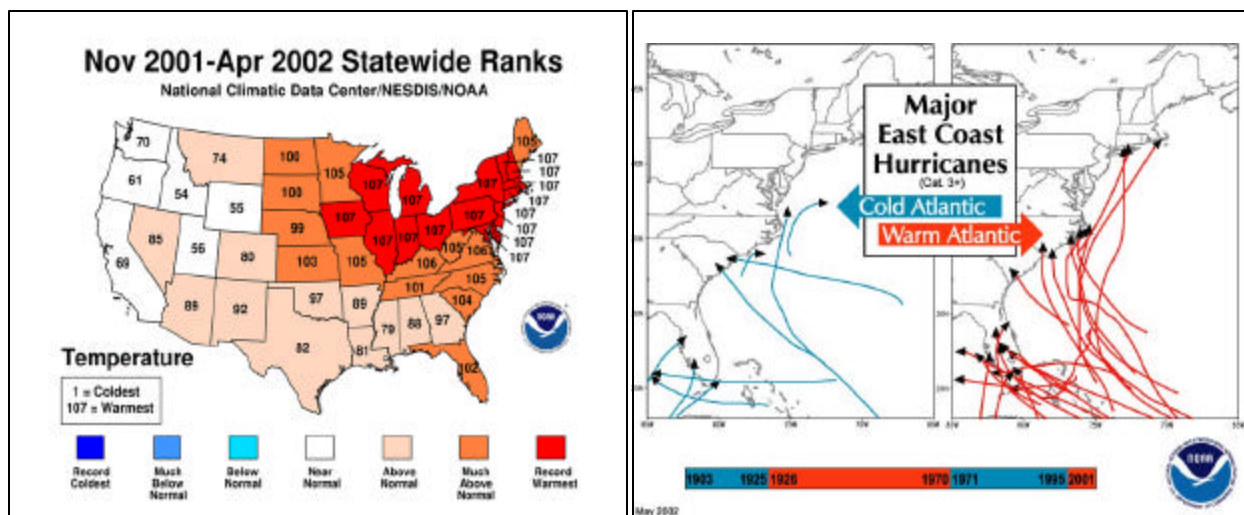
Panhandle drought severe (Oklahoman 5/19/2002) – Farmers in the Oklahoma Panhandle are calling the ongoing drought one of the worst they have ever seen, including those of the 1930s. Average rainfall in the region from June 2001 – April 2002 was the third driest since 1895, with a total precipitation of 8.68 inches, just over half their normal 16.69 inches for the period. Retired Texas County Worth Jeffus said that what rain had fallen made little difference: “We’d be in a dust bowl if it weren’t for the (Conservation Reserve Program) crops.”

Insurance not covering dry fields (AP 5/28/2002) – Western Nebraska farmers are finding that their crop insurance policies do not provide payment for prevented planting due to drought. Prevented planting policies are common, but are almost exclusive to excessive water. As farmers try to claim the provision for drought, many are being denied. Most are being told that drought “is not an insurable condition.”

U.S., Mexico contest Rio Grande water (AP 5/23/2002) – South Texas farmers planned to use tractors and pickup trucks to blockade a bridge across the Rio Grande, at Pharr. Mexican produce trucks use the bridge as a point-of-entry into the United States. The farmers are protesting a violation of the 1944 water-sharing treaty that allocates Rio Grande water between the U.S. and Mexico. The farmers, who are suffering through a long dry spell, claims that Mexico is 1.5 million acre-feet in arrears on the water it is supposed to supply to the Rio Grande. While south Texas farms wither, upstream farms in Mexico are flourishing due to abundant irrigation. Mexico does not want to release additional water from the reservoirs because of concerns about potentially record low water levels if the dry spell continues.

NOAA expects above-normal hurricanes in 2002 (NOAA 5/20/2002) – Hurricane experts predict that the 2002 season will produce 9-13 tropical storms in the Atlantic, 6-8 of which will become hurricanes. Two or three of these are expected to become major hurricanes (category 3 or higher). Long-term averages are 10 tropical storms, 6 hurricanes, with two classified as major. In 2001 there were 15 named storms, nine of which became hurricanes. Higher temperatures and lower wind shear in the Atlantic Ocean are cited as a key factor conducive to hurricane development. Most intense hurricanes that have struck the U.S. East Coast have occurred in a warm phase of Atlantic Ocean temperatures (*see chart below, on right*). The phase began shifting from cold to warm in 1995. Despite above-normal activity over the last two years, none of those hurricanes made landfall in the U.S., leading to concerns about preparedness. Tropical storms can prove to be as destructive; Tropical Storm Allison caused 24 deaths and \$5 billion in damages in June 2001 while never reaching hurricane levels.

<http://www.noaanews.noaa.gov/stories/s911.htm>



CLIMATE

President Bush's turnabout on climate change or was it? (OceanSpace 6/6/2002) – For the first time, the Bush administration released a report that attributed climate change to anthropogenic sources. The EPA's *U.S. Climate Action Report – 2002*, released to the United Nations, adopted the position of the IPCC reports that blamed human sources on increasing atmospheric carbon dioxide and associated climate changes. But, the EPA report adopted a position of adaptation to changes rather than mitigation, consistent with earlier stances of administration policy. As criticism mounted, the president dismissed the report - "I have read the report put out by the bureaucracy" and reiterated his earlier plan for voluntary reductions and technological innovation to spur carbon dioxide emissions.

<http://www.oceanspace.net/index.cfm?issue=186>

El Nino likely to be weaker than last event (NOAA 5/9/2002) – NOAA forecasters continue to monitor a developing El Nino, but note that its impacts should be less than those experienced in the strong 1997-98 event. This event is developing more gradually than the rapid onset of the last events. [Note: the negative phase of the Pacific Decadal Oscillation (PDO) will diminish sea surface temperatures, compared to the previous event, leading to less energy to drive strong atmospheric storms.]

<http://www.noaanews.noaa.gov/stories/s905.htm>

New tool for assessing climate predictions (UniSci 5/28/2002) – Researchers at the University of Arizona have developed a system that puts seasonal outlooks into perspective. The system incorporates user-defined needs to determine statistics on how the forecasts have performed in the past. This gives decision-makers some idea of the reliability of the forecasts. For example, as the time period being forecast gets closer, if past forecasts have been similar it may increase confidence in the value of forecasts. The site also provides information about what is considered "normal" at a particular location, setting a frame-of-reference for use of the outlooks. The site, which will be available from <http://hydis.hwr.arizona.edu/>, is planned for a late summer / early fall release. It is currently in beta test mode with certain user groups. More information is given in the cover story of the May 2002 *Bulletin of the American Meteorological Society*.

<http://unisci.com/stories/20022/0528026.htm>

Severe weather predicted two weeks in advance (UniSci 6/5/2002) – Catastrophic flooding in southeast Asia can be predicted on a much longer timescale than conventional forecasting techniques provide. Findings from the Bureau of Meteorology Research Centre in Australia have noted that Madden-Julian Oscillations, large waves that traverse the Indian Basin and SE Asia, trigger extreme climate events. Researchers note that prediction alone will not solve the problem; overdevelopment of coastal zones, deforestation, and growth of megacities make people more vulnerable to such climate extremes.

<http://unisci.com/stories/20022/0605025.htm>

Changing rainfall patterns spur plant growth (NASA 5/16/2002) – A NASA-funded study shows that changing rainfall patterns over the U.S. has allowed plants to grow more vigorously and absorb more carbon dioxide from the atmosphere. Ramakrishna Nemani, at the University of Montana, noted an increase in the U.S. terrestrial carbon sink over the last century, due to plant growth. Previous research had centered on increased temperatures and greater CO₂ concentrations as the cause, but this new research suggests that rainfall patterns are the primary driver. Model simulations showed that from 1950-1993, higher humidity combined with an eight percent increase in precipitation led to a 14% increase in plant growth. The model also showed increases in cloud cover, minimum temperatures, soil moisture, and stream flows. During the study period, increased minimum temperatures in the springtime coupled with increased precipitation in the autumn contributed to a longer growing season, and thus more carbon uptake. Data used in the study indicated increased precipitation throughout the contiguous U.S., with the exception of the Pacific Northwest.

<http://www.gsfc.nasa.gov/news-release/releases/2002/02-70.htm>

Warm polar winter eases ozone loss (NASA 5/28/2002) – Large-scale atmospheric waves that transported warm air from the equator to the polar regions in 1998 depressed ozone depletion, according to researchers at NASA's Goddard Space Flight Center. During 1998, strong large-scale waves brought both warmer air and increased ozone concentrations to the polar regions. The warm air inhibited development of Polar Stratospheric Clouds, very cold clouds that are a significant factor in ozone depletion. In addition, ozone concentrations, typically higher in tropical regions, were transported with the waves, increasing concentrations. During years when the waves are weaker, such as 1999 and 2000, ozone depletion is accelerated by the combination of decreased transport and increased occurrence of polar clouds.

<http://www.gsfc.nasa.gov/news-release/releases/2002/02-80.htm>

100,000-year cycle in solar activity may drive Earth's climate (UniSci 06/06/2002) – A Dartmouth geochemist found a 100,000-year cycle in the Sun's magnetic activity, which correlates well to a similar period oscillation in relatively cold and warm conditions on Earth. This time span for solar activity is longer than had previously been noted. The findings suggest that when the sun is magnetically more active, the earth experiences a warmer climate, and vice-versa. Presently, solar activity is high, corresponding to the present interglacial period that began about 11,000 years ago.

<http://unisci.com/stories/20022/0606022.htm>

NOAA is watching Santa Claus (NOAA 5/1/2002) – NOAA researchers installed a Web Cam to monitor snow cover and weather conditions. The camera presently sends back four images each day (available at: http://www.arctic.noaa.gov/gallery_np.html.) The camera is operated remotely by NOAA's Pacific Marine Environmental Laboratory.

<http://www.noaanews.noaa.gov/stories/s898.htm>

ENVIRONMENT

Legislature passes moratorium on water sales (Oklahoman 5/23/2002) – Senate Bill 1440 places a three-year moratorium on the sale of large quantities of water from Oklahoma to other states. During the period, there will be a committee to study Oklahoma water issues. Also, the legislation requires legislative approval of any compact with an American Indian tribe in the state before water can be sold out of state.

EPA gets involved in Illinois River dispute (AP 5/4/2002) – At the request of Rep. John Sullivan (R-Tulsa), the EPA will appoint someone to assist negotiations between Arkansas and Oklahoma over the regulation of chicken waste in the Illinois and other eastern Oklahoma rivers. Phosphorus from chicken waste collects in Oklahoma lakes, which promotes algae growth during hot weather. The poor water quality has contributed to rapid increase in water treatment costs for Tulsa, hurts the region's ability to attract employers, and harms tourism at the scenic lakes and rivers.

Chicken farmers sue companies (Oklahoman 5/31/2002) – In yet another turn of events in the battle over water quality in eastern Oklahoma rivers, 400 poultry farmers filed a lawsuit against an Arkansas chicken company for nearly \$30 million. The lawsuit, against O.K. Industries in Fort Smith, AR, alleges that the company unfairly locks farmers into long-term relationships which are solely dependent upon “arbitrary and capricious” decisions made by the parent company. Included in the aspects controlled by O.K. Industries, the lawsuit states, is the disposal of chicken litter, which has been blamed for damaging Oklahoma's water supplies.

Picher lead levels found to be 40 times EPA limits (AP 4/30/2002) – The EPA tested soil from school grounds in Miami and Picher, OK, and found eight of the 14 sites exceeded EPA regulations on lead content. One site in Picher, designated to be an elementary school playground, turned up a reading 40 times greater than the EPA limit. Other school grounds in Miami showed levels up to seven times the EPA limit. Four of the sites – two elementary schools and one kindergarten center in Miami and the Picher playground - will require extensive cleaning, while the other four sites will need only limited cleanup. Cleanup should be completed before classes resume in the fall.

Governor seeks lawsuit against U.S. Department of Interior (AP 5/4/2002) – Claiming that the U.S. Geological Survey and the Bureau of Indian Affairs were partially responsible for mining recommendations in Northeastern Oklahoma, Governor Frank Keating asked State Attorney Drew Edmondson to sue the U.S. Interior Department for partial cleanup costs. The Attorney General's office announced it would review the request to determine if the federal agency could be held liable. The lawsuit would seek funds for cleanup, voluntary relocation of residents, and monetary damages for the Tar Creek superfund site near Miami.

House approves nuclear waste facility (AP 5/9/2002) – The U.S. House of Representatives overrode a Nevada state veto, clearing the first hurdle to developing a nuclear waste repository in the Yucca Mountains, 90 miles from Las Vegas. The Senate must also override the state veto by late July for the plan to continue forward. Officials from Nevada also have three lawsuits pending in the courts.

Bush shields Florida Everglades from drilling (Oklahoman 5/30/2002) – President Bush allocated \$235 million to buy oil and gas leases in the Everglades and along Florida’s beaches. The move, part of which requires Congressional approval, would preserve the area from drilling. Florida’s governor Jeb Bush, the President’s brother, acknowledges that preventing drilling is a positive step for his re-election campaign, in a state where 75% of residents oppose drilling. Environmentalists have challenged the president to extend the same considerations for areas of Alaska and along the Rocky Mountains.

EPA establishes No Discharge Zone in Florida Keys (NOAA 5/22/2002) – The Environmental Protection Agency released new rules that prohibit boaters from releasing even treated wastewater in the Florida Keys. Although raw sewage has long been prohibited, some chemical treatment devices were permitted. Chemical devices eliminate bacteria, but they do not reduce nitrogen or phosphorus, two major pollutants and sources of algae blooms. Although ships only account for 3% of the total nutrients in the Florida Keys National Marine Sanctuary, they have a more significant impact in harbors, marinas, and other areas with poor circulation.

<http://www.publicaffairs.noaa.gov/releases2002/may02/noaa02063.html>

NOAA fisheries proposes conservation plan to for coho salmon (NOAA 5/31/2002) – NOAA’s Marine Fisheries Service, at the request of the Bureau of Reclamation, released a conservation plan that will promote recovery of coho salmon in the Klamath Falls River. Water supply issues last summer led to a standoff between farmers and conservationists over release of water for irrigation purposes. NOAA’s plan calls for improved water management measures, development of a water bank, and study and implementation of methods to improve habitat management for the salmon. The proposal would make more water available for irrigation purposes, and alleviate tension as evidenced last summer.

<http://www.publicaffairs.noaa.gov/releases2002/may02/noaa02r127.html>

Ethanol Plants produce toxins (AP 5/4/2002) – Ethanol, designed to reduce pollution associated with internal combustion engines, produces carbon monoxide, methanol, and some carcinogens at levels “many times greater” than promised, according to the EPA. Early tests showed low pollution levels, allowing plants to bypass Clean Air regulations. However, more recent tests show some plants with levels ten times greater than the minimum regulation limit. Industry leaders and the EPA plan to meet to work out changes in production processes.

‘Rain Gardens’ help recharge ground water (UniSci 4/25/2002) – Rain gardens, small catchments that collect pools of water, when taken on a large scale, may have a significant potential to recharge depleted ground water reserves. By placing an underlying layer of gravel beneath the topsoil, water is allowed to infiltrate rapidly into the subsoil, while preserving the ability for plants to grow above the pool. Modeling studies show that an area one tenth the size of a nearby paved area is sufficient to replenish the water displaced as runoff from the impervious surface. Larger areas do not increase recharge significantly. Researchers attribute these counter-intuitive findings to a process whereby water is funneled rapidly into a small area, getting into subsoil levels before it can be consumed by plants and evaporation.

<http://unisci.com/stories/20022/0425026.htm>

SCIENCE

Most adults expect the impossible from science (UniSci 4/02/2002) – A public opinion poll by the UK Market and Opinion Research International shows that 71% of the public look to scientists to give an “agreed view” about science issues while 61% expect science to provide 100% guarantees about the safety of medicines. The poll, commissioned by the new Science Media Centre (part of the Royal Institution in London), also reveals that the media is the primary source of science information for most people. Ninety percent of people rely on the media for at least some information about science, and 85% feel that scientists need to improve the way they communicate their research findings to the public through the media. The Science Media Centre is designed to bridge the gap between science and the media.

<http://unisci.com/stories/20022/0402024.htm>

Pollution may inhibit precipitation (NASA 5/2/2002) – Yale researcher Steven Sherwood found that aerosols depress the size of ice crystals in tropical thunderstorms, and may as a result reduce precipitation. The smaller, lighter ice crystals do not fall out of the cloud as easily and are more susceptible to evaporation. Pollution increases the number of aerosols which creates more nuclei and competition for ice crystals, thus making each one smaller. These findings are especially significant for the seasonal burning of biomass in the tropics and for precipitation efficiency in drought-prone areas like the Sahel, where dust particles have the same effect. Sherwood's article, "Aerosols and Ice Particle Size in Tropical Cumulonimbus," appears in the May 1, 2002 issue of the American Meteorological Society Journal of Climate.

<http://www.gsfc.nasa.gov/news-release/releases/2002/02-66.htm>

Lava may have led to mass extinction (MSNBC 6/6/2002) – Researchers have found that an extensive and prolonged period of volcanic activity, 250 million years ago, may be the cause of the largest extinction in Earth's history. The Permian-Triassic extinction saw the demise of 90% of ocean species and 70% of land species. Researchers believe that an area, almost half the size of Australia, was covered in lava nearly a half-mile deep. The lava would have filled the atmosphere with a choking concentration of sulfur dioxide, carbon dioxide and other gases, making it difficult for any species to survive. The eruptions, lasting over 100,000 years, caused waves of extinctions, rather than the single-point die-off associated with an asteroid's impact 65 million years ago that led to the extinction of the dinosaurs.

Earth's poles showing signs of reversal (Nature 4/10/2002) – New satellite data shows an anomaly in the magnetic field in South Africa, a possible sign of a shift in the Earth's magnetic field. The last reversal happened about 780,000 years ago, over a period of several thousand years. During transition periods, the magnetic field weakens, and even disappears altogether, leaving a complicated field of multiple poles all over the planet. When the field returns, the poles may swap. Scientists have noticed a 10% decline in the strength of the magnetic field, and if such trends continue the poles will disappear in about two millennia.

<http://www.newscientist.com/news/news.jsp?id=ns99992152>