

Conservation Committee Report

Volume 15 Issue 2

Jack Walters—Conservation Chairman

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DEP Turns on New High-Definition Falcon Cam in Time for Mating Season

The Conservation Pledge

I give my pledge as an American to save and faithfully defend from waste, the natural resources of my country; the soil, the water, the air, the minerals, the plant life and the wildlife.

This is my Pledge!

Inside this issue:

Warnings of global ecological tipping points may be overstated	4
DCNR Secretary Allan Visits Allegheny County to Announce \$509,500 Investment in Recreation, Conservation	7
DEP Awards 106 Grants to Protect, Improve Watersheds in 40 Counties	8
FDA Approves First Bionic Eye for the Blind	14
Watershed in Western Pennsylvania	15
Carbon Capture and Storage FutureGen 2.0 Project Moves Forward	16

The Department of Environmental Protection today launched its annual live, 24-hour webcast of a nesting pair of peregrine falcons who live on a ledge on the Market Street side of the Rachel Carson State Office Building in Harrisburg.

For the first time, three high-definition

cameras will chronicle the falcons' activities while streaming the footage live on the internet to viewers around the world.

"The falcon cam has become synonymous with the Rachel Carson State Office Building and our agency," DEP Secretary Mike Krancer said. "We are delighted to host these

unique birds of prey and look forward to presenting them in a way that more vividly shows their daily activities."

The new high-definition (HD) cameras include a personal-computer-operated zoom and pan and light/color

(continued on page 2)

Pittsburgh's Leaky Faucet: How Aging Sewers Are Impacting Urban Watersheds

Aging sewer systems are spilling a considerable amount of nitrogen into urban watersheds, diminishing both the quality of water and ecosystems' habitats. However, many studies documenting the impacts of nitrogen on

urban environs have not properly estimated the contribution of leaky sewer systems -- until now.

Using water samples from the Pittsburgh-based Nine Mile Run watershed, a Pitt research team reveals in the cur-

rent issue of *Environmental Science & Technology* that an estimated 10 to 20 tons of reactive nitrogen from sewage flows into Pittsburgh's Monongahela River every year from the six-square-mile watershed.

(continued on page 3)

DEP Turns on New High-Definition Falcon Cam in Time for Mating Season (continued)

balance capabilities. This new technology creates a crisper, more detailed image that enhances wildlife viewing opportunities. Around the time the first egg is laid, an additional HD camera will be set up for an intimate view into the nest.

In recent weeks, another male peregrine has challenged the resident male, who has been at the ledge since 2005. Despite that, the resident male has defended the ledge and started mating with the resident female, who has been at the ledge since 2012. Breeding activity typically takes place this time of year, so territorial battles can be fierce.

“The popularity of the streaming video has made the falcon page one of DEP’s most visited webpages,” DEP Environmental Education Director Jack Farster said. “By watching the young peregrines grow and develop, we can appreciate how our actions can have a direct and positive impact on endangered wildlife and their habitats.”

In the 13 years falcons have been nesting at the building, the nest has produced 48 eggs and 40 hatchlings. Of these, 29 falcons survived—13 males and 16 females. The gender of one of the nestlings who hatched in 2008 could not be determined. That bird was the runt of the clutch, or set of offspring.

Last year, the female falcon laid a clutch of four eggs and only one hatched. The first egg of the 2013 breeding season should be laid the first week in March. The eggs should begin to hatch around mid-May and the young falcons, also called eyases, will begin to take their first flights, or fledge, in mid-June.

While their numbers are increasing, the Pennsylvania Game Commission still lists peregrine falcons as an endangered species at the state level. Nationally, the U.S. Fish and Wildlife Service removed the bird from its list of endangered and threatened species in 1999.

The birds’ population in Pennsylvania has increased since the early 1990s as a direct result of conservation efforts like this one. According to the Game Commission, there are now 32 pairs of peregrine falcons nesting at various locations across the state.

For more information, to sign up to receive the Falcon Wire e-newsletter or to watch the falcons live, visit www.dep.state.pa.us and click on the Falcon Cam button on the homepage.

Source: PA Department of Environmental Protection

That means that up to 12 percent of all sewage produced by residents living in the Nine Mile Run watershed area leaks from the sewers and is transferred to the stream, negatively affecting stream water quality.

"This is a very complicated problem," said Marion Divers, principal author of the paper and a Pitt PhD candidate who conducted the study under the supervision of Pitt assistant professors of geology and planetary science Emily Elliott and Daniel Bain, who were coauthors of the paper. "You build a sewer system once, put it underground, and unless there's a catastrophic failure, you may not have a reason to dig it up and make sure it's not leaking. Now sewers across the United States and in Pittsburgh are aging, and as these systems grow older, more sewage is leaking into groundwater and streams."

While living organisms need nitrogen to build essential proteins, leaky sewer systems, the burning of fossil fuels, and overuse of chemical fertilizers have contributed to an overabundance of nitrogen in U.S. rivers and streams. Too much nitrogen can deplete the water of oxygen, with results as threatening as those seen in the Gulf of Mexico Dead Zone, where marine life doesn't have the oxygen necessary to live.

"Leaky sewers are simply not something most people are interested in until they begin to smell it in the stream or see things like a particular fish disappear from the stream," said Bain. "Based on the results from our Nine Mile Run study, this paper forces the wider urban ecology community to more carefully consider this sewage problem."

In order to accurately measure nitrogen's impact on Nine Mile Run, the Pitt team had to first determine how much was coming from leaky sewer systems. Over a two-year period, the researchers collected water samples biweekly from the small stream located in Pittsburgh's East End during both rainy and dry time periods with intensive sampling during one summer storm. Nitrogen concentrations were measured in the samples, and the researchers used this data to estimate sewage contributions to nitrogen in the stream's water. Notably, the results highlighted that sewers in this study basin are leaking consistently, even during dry weather conditions. While the apparent volumes of sewage are concerning, the study also reaffirms the substantial ability of urban systems to hold onto this nitrogen, despite the heavily impacted stream channel and the predominance of paved areas.

"This suggests a pervasive influence of leaking sewers -- even during periods without rainfall. This is in addition to the raw sewage contributions during wet weather from combined sewer overflows that are currently the subject of mitigation efforts in Pittsburgh," said Elliott. "Our report highlights the importance of assessing nitrogen leakage from sewers into our waterways, particularly as sewer systems age across the United States

Source: Science Daily

Warnings of global ecological tipping points may be overstated

There's little evidence that the Earth is nearing a global ecological tipping point, according to a new *Trends in Ecology and Evolution* paper that is bound to be controversial. The authors argue that despite numerous warnings that the Earth is headed toward an ecological tipping point due to environmental stressors, such as habitat loss or climate change, it's unlikely this will occur any-time soon—at least not on land. The paper comes with a number of caveats, including that a global tipping point could occur in marine ecosystems due to ocean acidification from burning fossil fuels. In addition, regional tipping points, such as the Arctic ice melt or the Amazon rainforest drying out, are still of great concern.

"When others have said that a planetary critical transition is possible/likely, they've done so without any underlying model (or past/present examples, apart from catastrophic drivers like asteroid strikes)," lead author Barry Brook and Director of Climate Science at the University of Adelaide told mongabay.com. "It's just speculation and we've argued [...] that this conjecture is not logically grounded. No one has found the opposite of what we suggested—they've just proposed it."

According to Brook and his team, a truly global tipping point must include an impact large enough to spread across the entire world, hitting various continents, in addition to causing some uniform response.

"These criteria, however, are very unlikely to be met in the real world," says Brook.

The idea of such a tipping point comes from ecological research, which has shown that some ecosystems will flip to a new state after becoming heavily degraded. But Brook and his team say that tipping points in individual ecosystems should not be conflated with impacts across the Earth as a whole.

Even climate change, which some scientists might consider the ultimate tipping point, does not fit the bill, according to the paper. Impacts from climate change, while global, will not be uniform and hence not a "tipping point" as such.

"Local and regional ecosystems vary considerably in their responses to climate change, and their regime shifts are therefore likely to vary considerably across the terrestrial biosphere," the authors write.

Barry adds that, "from a planetary perspective, this diversity in ecosystem responses creates an essentially gradual pattern of change, without any identifiable tipping points."

The paper further argues that biodiversity loss on land may not have the large-scale impacts that some ecologists argue, since invasive species could potentially take the role of vanishing ones.

(continued on page 5)

Warnings of global ecological tipping points may be overstated (continued)

"So we can lose the unique evolutionary history (bad, from an intrinsic viewpoint) but not necessarily the role they impart in terms of ecosystem stability or provision of services," explains Brook. The controversial argument goes against many scientists' view that decreased biodiversity will ultimately lessen ecological services, such as pollination, water purification, and carbon sequestration.

Of course, ecologists still know little about the many ecological roles single species may play, and some research has shown that losing even one key species can have a major impact. For example, top predators like wolves and sharks appear to play an oversized role in maintaining an ecosystem's biodiversity and services. Other studies have certain plants have evolved to be dispersed only by big herbivores, like rhinos and elephants. There are unlikely to be any replacement for elephants anytime soon

Despite arguing that global tipping points are unlikely, there is one current environmental issue that may fit the definition of an Earth-wide tipping point, only it would occur across the oceans not land: ocean acidification.

"Coral reef ecosystems appear to have disappeared globally, simultaneously, and suddenly at the Triassic–Jurassic transition, likely driven by global increases in ocean acidity and temperature in response to massive geological CO₂ release to the atmosphere," the scientists write.

Although less widely known than climate change, ocean acidification is also caused by rising carbon dioxide emissions, some of which are sequestered by the world's oceans. Carbon dioxide changes the chemistry of oceans, reducing pH levels and imperiling the world's coral reefs, along with crustaceans, mollusks, and even some plankton. The loss of such biodiversity could trigger a mass extinction event across marine ecosystems.

Still, Brook and his colleagues contend that a sudden focus on global tipping points is not only bad science, but unhelpful.

"We argue that it distracts from the huge ecological transformations that have already occurred, and runs the risk of leading to unjustified fatalism about catastrophic or irrevocable effects caused by tipping points," says Brook. "We think the focus should be on working out how to harmonize human aspiration with conservation goals, rather trying to avoid the unavoidable or see planetary management as 'us' (humans and their domesticated species) vs. 'them' (the rest of the biosphere)."

CITATION: Brook, B. W.; Ellis, E. C.; Perring, M. P.; Mackay, A. W. & Blomqvist, L. Does the terrestrial biosphere have planetary tipping points? *Trends in Ecology & Evolution*, 2013.

(continued on page 6)

Warnings of global ecological tipping points may be overstated (continued)

Source: **Jeremy Hance**
mongabay.com

Mongabay.com seeks to raise interest in and appreciation of wild lands and wildlife, while examining the impact of emerging trends in climate, technology, economics, and finance on conservation and development.

DCNR Secretary Allan Visits Allegheny County to Announce \$509,500 Investment in Recreation, Conservation

Department of Conservation and Natural Resources Secretary Richard Allan visited the former Pittsburgh Cut Flower property in Richland Township that will be conserved as open space with a state conservation and recreation grant.

The secretary highlighted \$509,500 grant to the Allegheny Land Trust for the protection of 146-acres of undeveloped land.

“This particular project is a perfect example of tying the environment to the economy, with the transformation of a former commercial property into protected open space, with the most disturbed areas being dedicated to new economic development,” Allan said. “We are always pleased when our investment leverages local and private dollars to accomplish these goals.” Allan was joined at the property by Allegheny Land Trust Executive Director Chris Beichner and Rep. Mike Turzai.

The grant is one of 198 projects across Pennsylvania receiving a total of \$26.5 million to create new recreational opportunities and conserve natural resources through DCNR’s Community Conservation Partnerships Program.

The 146-acres covered by the grant to Allegheny Land Trust are part of a 180-acre property that housed the Pittsburgh Cut Flower Co. from 1910 to the 1990s. The entire property consists of approximately 150 acres of meadows, ponds and woodlands which will be open space and support hiking, biking and fishing.

Nearly 30 acres of abandoned buildings and greenhouses that are currently being demolished to make the property safe will be available to be recycled for an economic development use.

Editor’s Note:

For a complete list of grants by county, visit:

<http://tinyurl.com/DCNRgrants2012>.

Source: PA Department of Conservation and Natural Resources

DEP Awards 106 Grants to Protect, Improve Watersheds in 40 Counties

The Department of Environmental Protection announced today that it will invest more than \$18.7 million in watershed protection projects intended to improve watersheds, stormwater runoff, acid mine drainage and educational programs, among other environmental efforts.

“Protecting the waters of the commonwealth is key to DEP’s mission,” DEP Secretary Mike Krancer said. “Providing these grants is a major component of continued excellence in water quality.”

This year, the Growing Greener program, which is funded by the Environmental Stewardship Fund, will award \$13,225,594 for 78 projects around the state. Five additional projects, funded by the Surface Mining Conservation and Reclamation Grant, will receive \$1,185,588. Two additional grants, totaling \$252,400, are funded by the Acid Mine Drainage Set-aside program.

The U.S. Environmental Protection Agency’s Section 319 Nonpoint Source Management Program, which was created through the federal Clean Water Act to help reduce water pollution from nonpoint sources, is funding 21 additional projects, which total \$4,062,368.

These projects will reduce nonpoint source pollution in watersheds where streams are impaired by implementing agricultural and stormwater best-management practices; developing, repairing or installing passive systems to treat abandoned mine drainage; and supporting the establishment of riparian buffers, among other objectives.

One of the Growing Greener program’s goals to invest in projects that protect watersheds from impairment due to nonpoint source pollution or those that will restore damaged waterways. Some examples of priority areas are restoration activities to reduce pollutant load in impaired watersheds for which total maximum daily loads have been developed; projects in priority watersheds that would reduce the source of impairment; and priority activities that lead to water quality restoration and protection.

In this latest grant round, 169 eligible applicants requested about \$38.8 million. Applications came from counties, authorities and other municipalities; county conservation districts; councils of governments; watershed organizations that promote local watershed conservation efforts; and other authorized organizations involved in restoring and protecting the environment.

For more information about Growing Greener or to see the complete list of grant recipients, email GrowingGreener@pa.gov; call 717-705-4500; or visit DEP’s website at www.dep.state.pa.us, keyword: Growing Greener.

Editor’s note: The 106 organizations that were awarded grants are listed below, alphabetically by county, with the project location and funding amount.

(continued on pages 9 to 13)

DEP Awards 106 Grants to Protect, Improve Watersheds in 40 Counties (continued)

Adams

Adams County Conservation District, Beaverdam Creek Watershed, \$31,500

Allegheny

Borough of Jefferson Hills, Peters Creek, \$145,500

Etna Borough, Etna Borough green streetscape, \$44,500

Peters Creek Watershed Association Inc., Peters Creek Watershed, \$15,771

Peters Creek Watershed Association Inc., Sleepy Hollow Run, \$11,275

Armstrong

Armstrong Conservation District, agricultural best-management practices, \$147,764

Armstrong Conservation District, Carnahan Run, \$96,926

Armstrong Conservation District, Redbank Creek, \$174,964

Armstrong Conservation District, Watson and Hill Run, \$17,000

Bedford

Broad Top Township, Sandy Run, \$42,500

Broad Top Township, Six Mile Run, \$289,950

Berks

Partnership for the Delaware Estuary Inc., Maiden Creek and Tulpehocken Watersheds, \$23,885

Blair

The Trust for Tomorrow, Poplar Run and Frankstown Branch, \$272,600

Bradford

Wysox Creek Watershed Association, Bullard Creek, \$244,720

Cambria

Cambria County Conservation District, Glendale Lake, \$16,580

Cambria County Conservation District, West Branch Susquehanna River, \$65,512

Cambria Township, Howell's Run, \$134,680

Clearfield Creek Watershed Association, Laurel Run, \$535,733

Cameron

Bucktail Watershed Association, Sinnemahoning Creek, \$14,485

Centre

Centre County Conservation District, develop manure management plan, \$89,250

ClearWater Conservancy of Central Pennsylvania Inc., Halfmoon Creek, \$185,000

Penns Valley Conservation Association, Elk Creek, \$94,708

Wildlife for Everyone Endowment Foundation, Halfmoon Creek, \$60,427

DEP Awards 106 Grants to Protect, Improve Watersheds in 40 Counties (continued)

Chester

Brandywine Conservancy Inc., Brandywine and Chesapeake Watersheds, \$207,966
Brandywine Valley Association Inc., Little Buck Run, \$56,500
Chester County Conservation District, Brandywine Creek, \$102,863
Green Valleys Association of Southeastern PA Inc., Valley Creek Watershed, \$200,000

Clinton

Susquehanna River Basin Commission, Birch Island Run, \$403,437
Susquehanna River Basin Commission, Sandy Run, \$148,104

Dauphin

Dauphin County Conservation District, Little Wiconisco Watershed, \$210,179

Delaware

Haverford Township, Darby Creek, \$46,750
Villanova University, Villanova University stormwater management, \$178,000
Villanova University, Villanova University stormwater management, \$126,745

Fayette

Mountain Watershed Association Inc., Glade Run Watershed, \$32,915
Mountain Watershed Association Inc., Marsolino-Leighty acid mine drainage, \$186,888
Mountain Watershed Association Inc., Morgan and Glade Run, \$47,943

Greene

Stream Restoration Incorporated, Whiteley Creek, \$99,983

Huntingdon

Huntingdon County Conservation District, Hartman Run, \$43,000
Huntingdon County Conservation District, Huntingdon County impaired streams, \$706,005

Indiana

Blackleggs Creek Watershed Association, Blackleggs Creek, \$32,476
Indiana County Conservation District, Plum Creek, \$410,272

Lackawanna

Lackawanna County Conservation District, Elm Brook, \$126,217

Lancaster

City of Lancaster, Lancaster City green infrastructure, \$379,457
Cocalico Creek Watershed Association, Little Cocalico Creek, \$30,000
Conservation Foundation of Lancaster County, Chesapeake Bay Watershed, \$12,387
Donegal Chapter of Trout Unlimited, Conowingo Creek, \$216,200
Save Speedwell, Speedwell Forge Lake, \$432,509
Stroud Water Research Center Inc., Lancaster County impaired streams, \$369,245

DEP Awards 106 Grants to Protect, Improve Watersheds in 40 Counties (continued)

Lawrence

Lawrence County Conservation District, Sugar and Honey Creek Watersheds, \$733,245

Lebanon

Jonestown Borough, Jonestown Borough stormwater management, \$99,271

Lehigh

Salisbury Township, Salisbury Township stormwater basin, \$15,106

Wildlands Conservancy Inc., Little Lehigh Creek Watershed, \$331,565

Luzerne

Earth Conservancy, Bliss Bank, \$46,750

Luzerne County Conservation District, Luzerne County waterways, \$397,778

Pennsylvania Environmental Council Inc., Nanticoke, \$11,999

Weatherly Borough, Hazle Creek, \$10,500

McKean

McKean County Conservation District, Lillibridge Creek and Rock Run, \$280,155

Mifflin

Mifflin County Conservation District, Hungry Run Stream, \$151,147

Montgomery

Hatfield Township, Hatfield Township stormwater basin, \$41,750

Upper Gwynedd Township, Skippack Creek Watershed, \$150,000

Northampton

Bethlehem City, Stefko Boulevard Swale, \$203,000

Northumberland

Northumberland County Conservation District, Schwaben Creek and Hallowing Run, \$356,000

Perry

Marysville Borough, Marysville Borough stormwater management, \$18,100

Potter

Potter County Conservation District, Sinnemahoning and Pine Creek Watersheds, \$99,000

Schuylkill

Schuylkill County Conservation District, Good Spring Creek, \$151,022

Schuylkill Conservation District, Oak Hill Borehole and West Creek, \$129,904

Schuylkill Headwaters Association Inc., Schuylkill River, \$69,254

DEP Awards 106 Grants to Protect, Improve Watersheds in 40 Counties (continued)

Sullivan

Eastern PA Coalition for Abandoned Mine Reclamation, Lewis passive treatment system, \$96,914

Susquehanna

Susquehanna County Conservation District, DuBois Creek, \$205,000

Susquehanna County Conservation District, Susquehanna River Basin, \$122,187

Tioga

Babb Creek Watershed Association Inc., Rock Run, \$163,007

Tioga County Conservation District, Wilson Creek, \$166,350

Union

Union County Conservation District, Buffalo Creek, \$180,404

Union County Conservation District, Union County waterways, \$173,140

Venango

South Sandy Creek Watershed Association Inc., Gadsby acid mine drainage, \$243,456

Wayne

Lake Wallenpaupack Watershed Management District, Lake Wallenpaupack stormwater management, \$76,050

Westmoreland

Jacobs Creek Watershed Association, Mt. Pleasant stormwater management, \$131,250

Jacobs Creek Watershed Association, Scottdale green streetscape, \$436,301

Jacobs Creek Watershed Association, Southmoreland High School stormwater management, \$57,000

Sewickley Creek Watershed Association, Andrews Run, \$182,782

Stream Restoration Inc., Ninemile Run, \$614,909

Westmoreland County Conservation District, Beaver Run, \$70,000

Wyoming

Lake Carey Welfare Association, Lake Carey, \$111,610

Mehoopany Creek Watershed Association Inc., Rogers Hollow Stream, \$152,388

Multiple Counties

Broad Top Township, Six Mile Run, \$191,000

Conemaugh Valley Conservancy, Inc., Conemaugh River Basin, \$45,000

Conemaugh Valley Conservancy Inc., Kiski Conemaugh River Basin, \$78,000

Eastern PA Coalition for Abandoned Mine Reclamation, acid mine drainage in eastern Pennsylvania, \$125,000

Headwaters Charitable Trust, Clarion River, \$104,000

DEP Awards 106 Grants to Protect, Improve Watersheds in 40 Counties (continued)

Headwaters Charitable Trust, Smith Run Watershed, \$250,000

Keystone College, Keystone College stormwater management, \$155,000

League of Women Voters of Pennsylvania Citizen Education Fund, municipal education, \$100,000

Montour County Conservation District, Chillisquaque Creek, \$288,861

North-central Pennsylvania Conservancy, Chesapeake Bay Watershed, \$165,630

Pennsylvania Association of Conservation Districts Inc., Statewide Non-Point Source Education Office, \$329,200

Pennsylvania Association of Conservation Districts Inc., technical assistance for Pennvest projects, \$93,000

Pennsylvania Association of Conservation Districts Inc., technical assistance, \$996,640

Pennsylvania Horticultural Society, southeast Pennsylvania, \$200,000

Pennsylvania Organization for Watersheds and Rivers Inc., watershed education, \$60,000

Pennsylvania State University, Lake Erie Watershed, \$371,843

Pocono Northeast Resource Conservation and Development Council, Consortium for Scientific Assistance to Watersheds, \$500,000

Stream Restoration Inc., passive treatment systems technical support, \$88,211

Stream Restoration Inc., passive treatment systems technical assistance, \$160,000

Trout Unlimited Inc., acid mine drainage assistance, \$160,000

Western PA Coalition for Abandoned Mine Reclamation, acid mine drainage in western Pennsylvania, \$125,000

Western PA Coalition for Abandoned Mine Reclamation, quick response program, \$100,000

Source: PA Department of Environmental Protection

FDA Approves First Bionic Eye for the Blind

The U.S. Department of Energy announced today that its support for a decade of revolutionary research has contributed to the creation of the first ever retinal prosthesis – or bionic eye – to be approved in the United States by the U.S. Food and Drug Administration for blind individuals with end-stage retinitis pigmentosa.

“The development of the artificial retina is just one more example of the unique value of our National Laboratories and research universities,” said Energy Secretary Steven Chu. “While no one can predict a breakthrough before it happens, the investments we’re making in research pay enormous dividends for our economy and improve our lives.”

The artificial retina, dubbed the Argus II Retinal Prosthesis System (developed and manufactured by Second Sight Medical Products Inc, Sylmar, California) may prove to be an aid to those blinded by the disease retinitis pigmentosa, which can run in families and is estimated by the National Institutes of Health to affect about 1 in 4,000 people in the United States. Over the ten year lifetime of the project, the Department provided \$75.2 million for the development of technologies aimed at advancing artificial retinas like the Argus II, which was based on work by a consortium of scientists using advanced technologies developed by several of the Department’s National Laboratories.

The Argus II can partially restore the sight of blind individuals after surgical implantation. Clinical trials demonstrated that totally blind individuals could safely use the device to successfully identify the position and approximate size of objects and detect movement of nearby objects and people.

The Argus II operates by using a miniature camera mounted in eyeglasses that captures images and wirelessly sends the information to a microprocessor (worn on a belt) that converts the data to an electronic signal and transmits it to a receiver on the eye. The pulses travel to the optic nerve and, ultimately, to the brain, which perceives patterns of light and dark spots corresponding to the electrodes stimulated. Blind individuals can learn to interpret these visual patterns.

(continued on page 15)

FDA Approves First Bionic Eye for the Blind (continued)

The \$75.2 million in funding for the ten-year project was provided through DOE's Office of Science. The project, conducted under a Cooperative Research and Development Agreement with the private sector company Second Sight, included researchers from five DOE National Laboratories —Argonne National Laboratory in Argonne, Illinois; Lawrence Livermore National Laboratory in Livermore, California; Los Alamos National Laboratory in Los Alamos, New Mexico; Oak Ridge National Laboratory in Oak Ridge, Tennessee; and Sandia National Laboratories in Albuquerque, New Mexico and five universities—California Institute of Technology in Pasadena, California; Doheny Eye Institute at the University of Southern California in Los Angeles, California; North Carolina State University in Raleigh, North Carolina; University of Utah in Salt Lake City, Utah; and the University of California in Santa Cruz, California.

DOE also worked closely with the National Eye Institute at the National Institutes of Health to support the development of the Argus II and the National Science Foundation provided support for material design and other basic research. More information about the project is available **HERE**.

More information about the FDA's announcement today is available **HERE**.

Argus II is a registered trademark of Second Sight Medical Products, Inc.

Source: The U.S. Department of Energy

Watershed in Western Pennsylvania

The U.S. Environmental Protection Agency has established a water quality improvement plan for bacteria to protect public health and streams, creeks and a lake in the Pine Creek watershed in Allegheny County, Pa. The waters are severely impacted by sewer overflows, storm-water runoff, failing septic systems and other sources that have driven bacteria levels as high as 100 times the acceptable limits.

EPA established the bacteria Total Maximum Daily Load or TMDL for the Pine Creek watershed in coordination with the Pennsylvania Department of Environmental Protection (PADEP). This TMDL identifies the maximum amount of bacteria the waterbodies can accept from various sources and still meet Pennsylvania water quality standards.

“We are guiding these reductions in harmful bacteria to protect public health in the Pine Creek watershed,” said EPA Regional Administrator Shawn M. Garvin. “These waters are meant for trout fishing, kayaking, canoeing and other recreational activities, and this TMDL provides a clear path to clean water based on extensive data and sound science.”

Pine Creek flows through the North Hills area in Allegheny County and joins the Allegheny River in Etna, north of Pittsburgh. The 67-square-mile watershed includes parts of 14 municipalities.

Since 2008, PADEP has listed Pine Creek and many smaller tributaries in the watershed – 118 stream miles in all – as impaired for recreational uses. Under the federal Clean Water Act, a TMDL is required for waters listed as impaired for a particular pollutant.

Contamination from raw sewage includes hundreds of different types of bacteria, viruses, and parasites. The predominant symptoms of pathogenic bacterial infections include abdominal cramps, diarrhea, fever, and vomiting. In addition to attacking the human digestive tract, pathogenic bacteria can cause illnesses such as pneumonia, bronchitis, swimmer’s ear, eye infections and hepatitis.

This TMDL addresses all sources of bacteria in the watershed, from sewage treatment plants and storm water pipes, to more diffuse dischargers such as failing septic systems.

EPA and PADEP solicited broad stakeholder involvement and public participation, and held discussions with local governments on developing a practical framework for achieving the necessary pollution reductions.

The framework’s recommendations include encouraging municipalities to take steps that would offer significant and immediate improvements, such as connecting failing septic systems to public sewers and eliminating illicit discharges.

The final TMDL can be reviewed on the EPA mid-Atlantic Region website at: http://www.epa.gov/req3wapd/pdf/pdf_tmdl/pinecreek-bacteria-mar2013.pdf.

Source: The U.S. Environmental Protection Agency

Carbon Capture and Storage FutureGen 2.0 Project Moves Forward Into Second Phase

Following the successful completion of the first phase, the Energy Department today announced the beginning of Phase II of project development with a new cooperative agreement between the FutureGen Industrial Alliance and the Department of Energy for an innovative carbon capture and storage (CCS) project in Illinois.

"The Department of Energy is committed to the demonstration of carbon capture and storage technologies. We believe FutureGen 2.0 is an important step in making economic, commercial scale CCS a reality," said U.S. Energy Secretary Steven Chu. "The project is important part of a portfolio of approaches we are pursuing to reduce carbon emissions from existing coal-fired power plants and perhaps other large, localized CO₂ emitters."

"Today's announcement from the Department of Energy that the FutureGen project is moving forward with Phase II shows a strong commitment from the Obama Administration to create jobs and demonstrate the future of low-carbon-emission coal power right here in central Illinois," said U.S. Senator Dick Durbin. "I thank Governor Quinn and all of the Illinois and industry stakeholders for their continued leadership on this issue. I join them in remaining committed to making FutureGen a reality, and to putting Illinois and the United States at the forefront of cutting-edge technology to improve the environment and create good-paying jobs."

"We have shown time and again that FutureGen is welcome, and the project will succeed in Illinois," said Illinois Governor Pat Quinn. "We look forward to working with all of the project partners to see that FutureGen 2.0 will move forward, and that the reality of this first-of-its-kind project will be realized in Illinois."

In cooperation with the FutureGen project partners, the Department of Energy is investing in the upgrade of a coal-fired power plant in Meredosia, Ill. with oxy-combustion technology to capture more than 1 million tons of CO₂ each year—more than 90 percent of the plant's carbon emissions. Other emissions will also be reduced to near-zero levels. Instead of capturing CO₂ in the presence of a large amount of nitrogen, the oxy-combustion approach extracts the oxygen from air before combustion, greatly reducing the cost of carbon capture at the exhaust stack. This project will test oxygen separation technology and exhaust processing technology after combustion at power plant scales. Using proven pipeline technology, the CO₂ will then be safely transported and securely stored underground at a nearby storage site. This groundbreaking project will help pave the way for other cleaner and more sustainable advanced coal-burning power plants.

(continued on page 18)

Carbon Capture and Storage FutureGen 2.0 Project Moves Forward Into Second Phase (continued)

The completion of the FutureGen 2.0 project's first phase included important technical and financial milestones like the identification of a sequestration site in Morgan County, preliminary characterization and test drilling, and a commitment from the Illinois Commerce Commission to cover the FutureGen 2.0 project's output under its power purchasing plans. The cooperative agreement announced today with the FutureGen Industrial Alliance will build on these successes to begin preliminary design, pre-construction and engineering for the retrofitted, near-zero emission coal-fired power plant.

Source: U.S. Department of Energy