 Arizona Daily Star

## UA team is part of \$43M study to make use of a slimy resource

Tom Beal Arizona Daily Star | Posted: Saturday, January 23, 2010 12:00 am

What if you could grow fuel and food while cleaning wastewater and capturing unwanted carbon dioxide?

That's the promise of turning algae into a biofuel and the premise on which the Department of Energy is investing hundreds of millions of research dollars.

You know algae - you've probably grown it inadvertently. It's a stream-clogging, pool-fouling aquatic plant that some scientists have spent careers trying to prevent.

But it has its good points. It removes the carbon from carbon dioxide. It thrives in wastewater and can even clean it up. It produces fatty lipids that can be easily turned into clean-burning biodiesel and other fuels. The leftover green mass can be fed to cattle or burned as fuel.

Scientists think algae will be a big improvement from corn, the most commonly used biofuel. Corn's production for ethanol is highly subsidized and has been criticized because it takes nearly as much energy to produce as it provides.

You could say the same for algae at present, but University of Arizona researchers hope to change the equation and are participating in a \$43 million federal study aimed at solving a variety of problems that have kept algae from being economically turned into a fuel.

The goal, said Michael Cusanovich, regents professor of biochemistry, is \$3-a-gallon algae biofuel.

"All of this stuff has been done for some time in small processes," Cusanovich said. "I can do lots of things in the lab. When you put them out in the field, you face some interesting problems."

Kim Ogden, UA chemical and environmental engineering professor, is lead engineer on the three-year grant given to the National Alliance for Advanced Biofuels and Bioproducts and principal investigator for the UA's \$3 million share of that federal research money.

Ogden's expertise is in reactors, but she said the program will investigate the entire life-cycle of an algae/biofuel process.

Algae isn't tough to grow, she said, but it takes a lot of water to produce a small amount - a liter contains 2 to 3 grams, she said.

"Dewatering" those batches of algae using traditional methods such as a centrifuge is an energy-expensive process, Ogden said, and any process that uses a lot of energy to produce a fuel is self-defeating.

Solving the problem isn't just about solving that step. Rather than aim for one big breakthrough, the team wants to improve each step of the process and integrate all those steps, Ogden said.

First, you need to find the best possible strain of algae.

Cusanovich, who is concentrating on developing the most productive strain of algae, said his goal is 50 percent lipids - the fats that produce a clean-burning biofuel.

Then, especially in the water-starved Southwest, you need to find ways to cut down on the use of water.

One of algae's attributes is that it thrives in nonpotable water. Cusanovich is among several researchers using partly treated wastewater to grow his varieties of algae.

Joel Cuello, professor of agricultural and biosystems engineering, grows algae in a photo-bioreactor he developed and patented at the research greenhouses on Campbell Avenue. He said Southern Arizona is a great place to grow algae with that one exception. "We have a lot of sunlight and land, but not a lot of water," he said.

Sewage that hasn't been totally treated for waste is one solution. "We consider it waste, but from the point of view of the algae - it's nutrients," he said.

Another of algae's alluring attributes is its ability to capture carbon. It grows better in a CO<sub>2</sub>-enriched atmosphere, which is why carbon dioxide is bubbling through beakers of green liquid all over campus these days.

One thought is to locate algae farms next to power plants. The Department of Energy recently awarded a \$70.5 million grant to Arizona Public Service to do just that at its coal-fired Cholla Power Plant near Holbrook.

How to grow algae is another part of the investigation.

"Racetracks" - ovals of shallow circulating water are one possibility. Kevin Fitzsimmons, professor of soil, water and environmental sciences, spent the early part of his career figuring out how to get rid of algae in the canals of the Salt River Project and the Central Arizona Project.

He now works with algae growers in the Casa Grande area, where algae was originally grown as feed for fish and shrimp but is increasingly looked at as a product itself.

Years of scientifically controlling algae blooms created the expertise to make them happen, he said.

"We can get it to work when we want it to in raceway systems," he said. "Getting the target algae to bloom without getting other things, that's the biological question I'll be involved with."

Work at the UA might identify the best methods for growing algae in the Southwest, Ogden said, while university researchers and industrial partners devise solutions for different locations.

There are many questions, Ogden said, and they require expertise from a variety of areas.

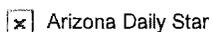
The goal is to develop a "cradle to grave" system that not only solves the engineering problems but makes use of every byproduct and deals with waste created, she said.

"We're doing a life-cycle analysis. How much energy does it take? Does the whole thing work?"

Ogden expects the research will be productive enough to merit renewal when this three-year study is done and it's time to "scale-up" the bench-top studies into working algae farms.

"I think we'll be there," she said.

Contact reporter Tom Beal at 573-4158 or [tbeal@azstarnet.com](mailto:tbeal@azstarnet.com)

 Arizona Daily Star

## Even if you're careful, drugs can end up in water

By CLARKE CANFIELD | Posted: Sunday, February 7, 2010 1:25 pm

The federal government advises throwing most unused or expired medications into the trash instead of down the drain, but they can end up in the water anyway, a study from Maine suggests.

Tiny amounts of discarded drugs have been found in water at three landfills in the state, confirming suspicions that pharmaceuticals thrown into household trash are ending up in water that drains through waste, according to a survey by the state's environmental agency that's one of only a handful to have looked at the presence of drugs in landfills.

That landfill water — known as leachate — eventually ends up in rivers. Most of Maine doesn't draw its drinking water from rivers where the leachate ends up, but in other states that do, water supplies that come from rivers could potentially be contaminated.

The results of the survey are being made known as lawmakers in Maine consider a bill, among the first of its kind in the nation, that would require drug manufacturers to develop and pay for a program to collect unused prescription and over-the-counter drugs from residents and dispose of them.

Scientists and environmentalists have long known of the common presence of minute concentrations of pharmaceuticals in drinking water, either through human excretion flushed into sewers or leftover medicine thrown down the drain. Research shows that pharmaceuticals sometimes harm fish and other aquatic species, and that human cells can fail to grow normally in the laboratory when exposed to trace concentrations of certain drugs.

The Maine Department of Environmental Protection found tiny amounts — measured in parts per trillion — of medications ranging from antidepressants and birth control pills to blood pressure and cholesterol prescriptions. The most prevalent drugs were over-the-counter pain relievers, including ibuprofen and acetaminophen.

"People need a way to properly dispose of their drugs, and they're not getting it right now," said Mark Hyland, director of the state Department of Environmental Quality's Bureau of Remediation and Waste Management.

The bill is one of many "take-back" programs under consideration in more than half a dozen states and would be the first of its kind if enacted; it has won committee support and awaits further action.

The bill is opposed by the Pharmaceutical Research and Manufacturers of America, a Washington-based organization that represents pharmaceutical and biotechnology companies and has partnered with other groups to pay for advertising against the proposal.

The lobby acknowledges that previous testing shows trace levels of pharmaceuticals can be found in water supplies and landfills, but says the levels are so small that they pose little risk.

"The amounts of pharmaceuticals (in the environment) are infinitesimally small," said Marjorie Powell, senior assistant general counsel. "We're talking about two drops in an Olympic-size swimming pool. Those two drops are much lower than any doses that would have an effect on humans."

The state last October tested leachate at landfills in Augusta, Brunswick and Bath. Hyland ordered up the study after members of the pharmaceutical industry expressed skepticism about the presence of pharmaceuticals in landfill water.

Leachate at Maine landfills typically is piped or trucked to municipal wastewater treatment plants. Those plants are not equipped to remove drugs from the water before it is discharged into rivers and the ocean.

The pharmaceuticals found in the landfills don't pose a direct threat to drinking water, Hyland said. The landfills are lined to protect groundwater supplies, and in Maine there aren't any wastewater plants that treat leachate and discharge into rivers that ultimately supply drinking water.

But the leachate — in high enough concentrations — can pose a threat to fish and shellfish. Research suggests that hormonal drugs, such as birth control pills, tend to feminize fish. If the trend continues, Hyland said, there could be too few male fish to continue reproduction.

"What you find are greater concentrations of females downstream from where they've seen a dose of hormones, so you find a feminization of the fish population where there are fewer males around," he said.

Hyland said he has questions about the effect on commercial seafood — one of Maine's biggest industries — in ocean waters downstream from the rivers, particularly bivalves such as clams or mussels, which filter water constantly and live near the shore.

"But obviously we need to know a lot more before we can draw a lot of conclusions," Hyland said.

Although landfill leachate doesn't get into drinking water supplies in Maine, it probably does elsewhere, said Andy Tolman, a geologist with the Maine Center

for Disease Control and Prevention. And some scientists urge caution about the dangers of drinking such water over several decades.

"Many larger states have big rivers that are used for both waste disposal and drinking water supplies, places like Ohio and Pennsylvania," Tolman said. "The same river gets used a number of times, and they're very concerned about treatment of sewage and leachate."

Powell, from the pharmaceutical lobby, argued that people can properly dispose of their drugs in their household trash. In Maine, much of the trash is burned, she said, and pollution control experts agree that incinerating unwanted drugs is the safest solution.

She argued that if the bill does pass, it will only make drugs more expensive, she said.

Concerns have grown in recent years over pharmaceuticals reaching drinking water supplies. An Associated Press investigation in 2008 reported that the drinking water of at least 51 million Americans contains minute concentrations of a multitude of drugs.

It's commonly believed that the vast majority of drugs that get into water supplies come from human and animal excretion and that smaller amounts come from flushing them down the toilet or drain, a practice the Food and Drug Administration says is not recommended for most medications.

Federal guidelines recommend using community drug take-back programs to dispose of medications. If those aren't available, people should mix their unwanted drugs with cat litter or some other undesirable substance, put them into a sealed container and put it in the trash, according to the Office of National Drug Control Policy.

<<Back



## Sewer fees could creep higher over four years

Posted: Feb 9, 2010 10:26 PM MST

Updated: Feb 9, 2010 10:26 PM MST

Pima County is planning on raising your sewer rates to upgrade facilities and comply with environmental requirements. 9 On Your Side's Dan Spindle talked with some taxpayers who think the plan stinks.

You may have seen construction work happening at the wastewater treatment facility off I-10 at Ina and there's more work to be done..... a lot more.

And with a price tag around \$700,000,000, your sewer rates could be creeping up each year for at least the next four years.

John Kromko and other members of the Pima Association of Taxpayers told me the rates have already been raised and enough is enough.

"They don't seem to understand what situation people are in. We're losing our jobs. We still have a very high foreclosure rate. We can't stand this anymore," Kromko said.

But according to state mandate the Regional Optimization Master Plan or ROMP as it's called, must upgrade the facilities on Ina Road and replace the Roger Rd facility by 2014 and 2015 respectively.

The Arizona Department of Environmental Quality wants to be sure unhealthy levels of ammonia and nitrogen don't end up here, in the Santa Cruz River bed. But that's only one of the elements of ROMP's wastewater makeover.

The County's wastewater department presented its financial plan in a public hearing tonight highlighting the slight fee increase from around \$29 dollars to just over \$40 for the average family over the next 4 years.

Michael Gritzuk, director of the Pima County Regional Wastewater Reclamation Department told us the fee hike is necessary for the required improvements to the plants.

"We're not making a profit but we have to charge what the actual cost to the system is," Gritzuk said.

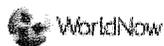
But some worry that slight increase could continue indefinitely.

"What we're worried about is they never have enough money. They plan for stuff and say it's going to cost this much and it never comes close," Kromko said.

After tonight's meeting the Pima County Board of Supervisors will have a public hearing before final approval of the fee hike is voted upon but the Wastewater Reclamation Department would like to have their financial plan finalized by March.

For more information visit:

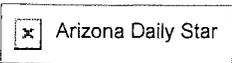
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 Arizona Daily Star

## Council OKs study on creating regional water, sewer setup

Rob O'Dell Arizona Daily Star | Posted: Wednesday, February 10, 2010 12:00 am

After two years of study, the Tucson region can embark on a regional effort to plan its growth and water future after the Tucson City Council gave its unanimous approval on Tuesday.

Although approval of the study allows for the first steps toward creating a regional water and sewer system, City Council members made it clear they were only approving the study and not giving approval to its recommendations.

The council still needs to give its final approval next week.

"I see this study as an important step," said Councilwoman Karin Uhlich, adding that approving the study only "points to areas where we have to make a decision" rather than tying the city's hands.

Numerous speakers who urged the council to approve the study focused on how a new water plan could help restore riparian areas, protect the Sonoran Desert wildlife and ecosystem, and provide a balance between the environment and growth. They focused much less on creating a regional water and sewer system.

Business leaders asked for a delay in approval because they said they didn't have a voice in the process. Uhlich said the idea of pitting the economy versus the environment is a "false dichotomy."

Tucson and Pima County have now given at least initial approval to the second phase of the five-phase plan that could lead to some type of regional water authority.

The city and county have six months to come up with a plan to institute the numerous recommendations. They include acquiring new, reliable water supplies, preserving riparian areas, directing growth to sustainable areas, integrating land-use planning with water planning, maximizing effluent use and increasing conservation.

The next phases of the regional water discussion would be to assess the infrastructure and resources for all of the water and sewer providers in the metro area; set regional policies; and finally, develop a sustainable water future.

In other business regarding water, the council voted to make the town of Marana pay water credits it owes Tucson before the city opens up talks of serving water to new areas in Marana.

Marana owes Tucson 1,300 acre-feet of credits for water under an agreement between the two entities from 2000-05. It lapsed in 2005 and two years later the city made it a policy not to serve any new Marana locations.

Steve Huffman, Marana's director of intergovernmental relations, said Marana will pay the credits but it wants to negotiate with the city about the water policy.

The only way to do that is to negotiate a new agreement that has Marana taking the responsibility for the future assured water supply of the new Marana connections, said Chris Avery, an attorney for Tucson Water.

### City closures

City Parks and Recreation facilities are closing on five Fridays over the next three months to accommodate mandatory employee furlough days.

All facilities - including pools, centers and KIDCO - are included in the closures set for Friday, March 12, April 9, May 7, and May 28.

City golf courses and Reid Park Zoo will remain open on the scheduled furlough days, according to a parks department news release.

The City Council approved furlough days last month.

Contact reporter Rob O'Dell at [rodell@azstarnet.com](mailto:rodell@azstarnet.com) or 573-4346.

# GREEN VALLEY NEWS AND SUN

NEWS

## Expert: Don't ignore water issues

Print Page

By Dan Shearer, Green Valley News

Published: Tuesday, February 16, 2010 11:40 AM MST

When Robert Glennon says, "We humans have an infinite capacity to deny reality," he's not trying to insult you. He's trying to wake you up.

Glennon, a law and public policy professor at the University of Arizona, was among the speakers Wednesday at "Rebalancing the Earth," a two-part series focusing on water, energy, global warming and other issues.

Glennon's book, "Unquenchable: America's Water Crisis and What to Do About It," is a tough look at a resource he says we're wasting with every flush, every decorative fountain and every new blade of grass. And, he reminded the packed auditorium at Green Valley's Community Performing Arts Center, "Water is finite and exhaustible."

Glennon's hourlong overview of the problem and solutions applauded the efforts of Las Vegas, which has incorporated notable water conservation measures in casinos, homes and businesses, while taking to task the state of Georgia, which he says "is an unrepentant state ... and is in denial" about the severity of its water shortage.

But Glennon's arguments don't allow critics to place him anywhere on the political spectrum but squarely in the middle. He's just as critical of so-called "green" efforts as he is of those who insist a heavy rain will solve all our problems. Ethanol and solar power, he says, take a lot of water and could create a bigger problem than they address.

"The (U.S.) energy policy pays no attention whatsoever to the water use of those various types of production," he said in a July appearance on "The Daily Report" with Jon Stewart.

Among possible solutions:

- Desalination of ocean water, "but it's not a silver bullet" because it is expensive, takes a lot of energy and is a complicated process.
- Make people pay more for water, and use a graduated scale that hits high users hard.
- Water reallocation: Growth must pay its own way. Developers must "bring water to the table" when proposing projects, often by buying existing water rights from somebody else.
- Wind power uses almost no water, he said, but it is intermittent.

"We're doing to water what we did to the buffalo," Glennon said. "We've harvested it into extinction."

He said real answers won't be realized until somebody in Washington has "the moral compass and political will to act."

Global warming

Also speaking Wednesday was Malcolm Hughes, a UA Regent Professor of dendrochronology.

Hughes addressed global warming, which he agreed can be a murky topic at times, but not as difficult to understand as some would lead you to believe.

While small factors such as cloud color and even war can have an affect on climate modeling, what's undeniable is the warming brought on by population growth — most notably in the last century, he said.

Hughes said all evidence points to the continuing increase in temperatures in the future.

Hughes only casually and quickly acknowledged an international dust-up at the end of last year that called into question his credibility along with that of global warming proponents.



Robert Glennon, a law professor at the Rogers College of Law at the University of Arizona, signs his book, "Unquenchable: America's Water Crisis and What to Do About It," after speaking Wednesday in Green Valley. Photo by Dan Shearer/Green Valley News

Hughes and other scientists came under scrutiny for e-mails that critics claimed prove they tried to distort data to hide evidence that global warming isn't a real threat.

But others say the critics are distorting the contents of the emails, which were stolen, and aren't guided by scientific research as much as the politics of global warming.

Coming Wednesday

"Rebalancing the Planet" was sponsored by the Osher Lifelong Learning Institute (OLLI) at the University of Arizona/Green Valley in cooperation with the UA Institute of the Environment.

The sessions were conceived and organized by Miriam and Bill Sacks, who worked with volunteers to bring it to Green Valley.

On Wednesday, Leonard Koch, an internationally recognized nuclear expert, will talk about the Integral Fast Reactor (IFR), which many in the scientific community say dispatches fears about nuclear waste and opens the door to expanded use of nuclear power in this country.

Joining him is, Tom Blees, whose book "Prescription for the Planet" addresses some of the nation's greatest environmental questions, including global warming, energy and pollution.

[dshearer@gvnews.com](mailto:dshearer@gvnews.com)

IF YOU GO

A few tickets are still available for part two of the OLLI/UA/Green Valley presentation of "Rebalancing the Earth," set for Wednesday, Fe. 17, at the Community Performing Arts Center, 1250 W. Continental Road, Green Valley. Get tickets at the GV Sahuarita Chamber of Commerce. Speakers: Leonard Koch, International Global Laureate, and Tom Blees, author of "Prescription for the Planet."

Koch's book "EBR II" will be available for \$50; Blees' book will be available for \$20.

The discussion continues in March as Miriam and Bill Sacks lead a four-part series titled "Planet Earth Spinning Out of Control" that will cover climate change, clean energy, how the social system creates obstacles to solving problems, and more. Miriam has a background in radiation science and taught at Georgetown University Hospital, and was radiology supervisor at Kaiser Permanente in the Washington, D.C. area. Bill has a Ph.D. in astrophysics and earned an M.D. and became a radiologist. He practices in Tucson.

Registration is closed, but OLLI members can e-mail [mimisacks@cox.net](mailto:mimisacks@cox.net) for possible inclusion. Miriam Sacks is organizing the sessions.

Join OLLI: 520-626-9039, or e-mail [ollimail@email.arizona.edu](mailto:ollimail@email.arizona.edu)

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The New York Times

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February 19, 2010

## Developer Proposes 30,000 Solar Dishes in Calif. Desert

By SCOTT STREATER of Greenwire

Federal efforts to permit nearly a dozen large-scale solar-power projects in California by year's end moved a significant step forward last week as the Bureau of Land Management rolled out a detailed environmental review for one of the largest plants proposed to date -- a 750-megawatt concentrated solar facility in the Colorado Desert.

When completed, Stirling Energy System Inc.'s \$2.2 billion Solar Two project is expected to include 30,000 solar dish systems across more than 6,100 acres of federal land -- making it the largest project to move this far through the federal permitting process.

At full capacity, Solar Two could generate enough electricity to power more than a quarter-million homes, according to a **draft environmental impact statement** (pdf) (EIS) released last week by BLM and the California Energy Commission.

The proposed plant, in the Imperial Valley about 14 miles east of El Centro, is one of nine commercial-scale solar projects in California that the Interior Department has placed on a fast-track permitting schedule for 2010. Plants that break ground by the end of the year can qualify for lucrative stimulus grants under the American Recovery and Reinvestment Act.

The other two solar projects to reach the draft EIS stage are the Ivanpah Solar Energy Generating Station, a 400-megawatt solar power plant in the Mojave Desert near San Bernardino County, and the 45-megawatt Lucerne Valley Solar Project in San Bernardino County. BLM and CEC issued a draft EIS for BrightSource Energy Inc.'s Ivanpah project in November and Chevron Energy Solutions' Lucerne Valley project this month.

Together, the nine fast-tracked solar projects have a total generation capacity of 4,580 megawatts -- enough to power about 1.6 million homes, according to federal estimates.

A final EIS on Stirling's Solar Two project should be completed in the next few months, said David Briery, a BLM spokesman in Sacramento.

Stirling has secured a 20-year power purchase agreement with San Diego Gas & Electric, and the electricity produced at Solar Two will power homes and businesses in the San Diego metropolitan area about 100 miles to the west. A 10.3-mile-long electricity transmission line would be built to help bring the power to market, according to the EIS.

"We're expecting to have the permits in hand by late summer and to get this project into construction by the fall," said Sean Gallagher, vice president for market strategy and regulatory affairs for Tessera Solar North

America, Stirling Energy's sister company involved in project planning. "It's a big project and it's a lot of work, and we've taken the approach of let's cooperate and make sure we address everyone's issues up front."

Some of those issues involve environmental impacts, including questions about water availability in the arid Imperial Valley and potential impacts to species like flat-tailed horned lizards, burrowing owls and peninsular bighorn sheep.

Environmental groups monitoring the Solar Two project and other fast-tracked proposals in California say Stirling appears to be addressing such issues in a proactive and thoughtful manner. For example, 1,039 acres of the proposed project site are already disturbed and being used as BLM-sanctioned off-roading trails.

"I think Stirling Solar Two is ... headed in the right direction," said Kim Delfino, California program director for Defenders of Wildlife, a national conservation group. "I'm optimistic about the project."

#### Overcoming resistance

Still, efforts to build large-scale solar projects in the Southern California desert have met resistance from environmentalists worried that the federal push to expand renewable energy will damage or destroy pristine natural resources.

A prime example is the Ivanpah Solar Energy Generating Station in the Mojave Desert.

BLM's draft EIS for that project, released last November, concluded that with proper mitigation the Ivanpah plant would not cause significant harm to the 4,073 acres of undisturbed desert where it would be sited. But BLM also found that the project could destroy rare plants and permanently alter prized views from the nearby Mojave National Preserve, as well as potentially harm federally protected desert tortoises that would be relocated to make way for the project (*Land Letter*, Nov. 12, 2009).

Last week, BrightSource submitted a revised project plan that reduces the project size by 12 percent in an effort to trim the number of desert tortoises that must be relocated and to avoid an area of rare plants. The revision will also result in scaling back the amount of electricity capacity from 440 megawatts to 390 megawatts, according to the company (*Greenwire*, Feb. 12).

Environmental groups who have opposed BrightSource's plans to locate the plant in the Ivanpah Valley were cautiously optimistic about the revised plan.

"I think from our perspective, we're happy they are starting to work to address some of the issues we've been raising for more than year," said Delfino, the Defenders of Wildlife official. "But our feeling is there is more work to be done. The project is still proposed in a high-density area for tortoises."

Delfino said her group has pushed for BrightSource to move the proposed project closer to a nearby federal highway where there are fewer tortoises.

"No matter where you put this project, you're going to impact tortoises. It is inevitable," she said. "The question is are you going to impact lower-density or higher-density populations?"

#### Water is key

Meanwhile, Stirling Energy's Solar Two project must address some big environmental questions, too, including nagging questions about water supply.

BLM's analysis found that the project would require 10.4 million gallons of water annually to wash solar panels, provide dust control and support other plant operations.

But, the agency said, such a need could not be met by the region's existing surface or groundwater.

"Water studies showed that the aquifer is significantly overdrafted and that new well permits are not being granted," the draft EIS states.

There is, however, plenty of available wastewater, and Stirling has proposed a novel approach that could allow for the use of treated sewage water to meet its demand.

The treated wastewater would come from nearby Seeley, Calif., where Stirling would pay to upgrade the town's wastewater treatment plant so that the water meets state requirements for reuse. The company would also pay to train plant operators to use the new equipment and build an 11.8-mile underground water pipeline to the plant, according to the EIS.

In addition, the company is working to reduce its water demand "by developing alternative mirror washing methods and schedules," according to the EIS.

#### Wildlife concerns

Another concern cited by BLM is that the project would occupy a site that "supports a diversity of mammals, birds, and reptiles, including some special status wildlife species, such as flat-tailed horned lizard (FTHL) and burrowing owl." The Fish and Wildlife Service is currently reviewing whether the lizard should be added to the federal Endangered Species List.

Rare desert bighorn sheep also occupied part of the project site as recently as last spring, but federal and state wildlife officials believe the sheep were "flushed" onto the property by off-road vehicles and do not normally use the area to forage or as a migration route.

Much of the 6,140 acres of BLM land, and another 300-acre parcel of privately owned land, would need to be graded to make way for the solar power systems.

BLM and the California Energy Commission, which are jointly handling the environmental assessment of the project, have proposed that Stirling purchase 6,619 acres "of habitat suitable for these listed species" to compensate for the loss of habitat at the project site. Including surveys and fees, the total cost for the mitigation would run \$5.7 million, according to the EIS.

Gallagher, the Tessera Solar official, said BLM has identified several nearby inholdings -- private parcels within federally managed land -- that would be suitable to transfer lizards.

Lastly, the project would require two 2.5-million-gallon evaporation ponds to store wastewater, causing concern among regulators that the ponds will attract animals that prey on the flat-tailed horned lizard and other species. Stirling has proposed to build fences around the structures and overlay the ponds' surface

areas with netting to prevent predators from accessing them.

"We made a conscientious effort to take a responsible approach to the sizing of this project, and we've tried to work closely with the environmental groups to make sure that at least some of them can support this project," Gallagher said.

**Click here** (pdf) to read the draft EIS.

Streater writes from Colorado Springs, Colo.

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 Arizona Daily Star

## County set to restart its manhole survey; possible cost: \$500K

Andrea Kelly Arizona Daily Star | Posted: Monday, February 22, 2010 12:00 am

Pima County is looking for a few good manholes, again.

It's about to pay a Tucson consultant \$500,000 to go find, count and map them.

Nine years ago, the county paid Raul Piña's engineering firm, then known as Tetra Tech, \$4.3 million to count the manholes in the streets. But only 87 percent of them were located and logged before the money ran out.

So now the county wants to know where the rest of its manholes are. And even the \$500,000 probably is still not enough to track them all down, said Michael Gritzuk, Wastewater Reclamation Department director.

In the first go-round, Piña's firm documented more than 65,000 manholes during several years of work. The job includes finding them (some were paved over in old road projects or covered with silt in washes), establishing their coordinates using the Global Positioning System, assessing the condition of each manhole and surveying the elevation of the hole.

"We've been the butt of many jokes on counting manholes. It's serious business in the sense that it's a complete inventory of the system," County Administrator Chuck Huckelberry said.

County officials estimate there are still about 9,000 manholes not counted from their inventory. The \$500,000 should be enough for Piña's firm, now called CPE Consultants, to locate and log 7,000 more.

The original contract came to about \$66 per manhole. If the Pima County Board of Supervisors approves this next job, it comes to about \$71 per manhole this time.

"I think we get an awful lot for \$70," Gritzuk said.

Once workers know where all the holes are, crews can respond even faster to problems in the sewer system, he said. Plus, when the contractor looks at the condition of the manholes, the county can fix the ones that are in bad shape.

"As the contractor was going through and locating manholes and assessing them, almost immediately thereafter we moved ahead with whatever the need was, to raise the surface or redo the manhole," Gritzuk said of the first project.

The Board of Supervisors put off approving the counting contract last week after Supervisor Ray Carroll asked that it be removed from the consent agenda, a collection of routine items approved all at the same time without discussion. Carroll said there should be a public discussion of the award.

Supervisor Ann Day agreed, saying there were too many unanswered questions. It's scheduled to come back for a board vote in the next month.

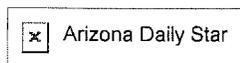
The original contract to Tetra Tech came after the company submitted materials to prove it was the most technically qualified for the job. Carroll said the county should have looked at what each company would have charged.

Day asked, "Why is it absolutely necessary at this time to spend half a million dollars for consultants when we're trying to rein in operations and maintenance costs and we have less money coming in from connection fees?"

The project must be finished because the data help the wastewater department determine if it has enough capacity when developers want building permits, or what areas may need to be updated, Gritzuk said.

In addition, it's part of the state's permit for certain wastewater systems, said John Bernal, deputy county administrator.

Contact reporter Andrea Kelly at 807-7790 or [akelly@azstarnet.com](mailto:akelly@azstarnet.com)



Police began collection effort to stem potential for youth access, abuse

## OV program helps people get rid of unwanted Rx drugs

Lourdes Medrano Arizona Daily Star | Posted: Thursday, February 25, 2010 12:00 am

An Oro Valley program that encourages people to safely dispose of prescription drugs got rave reviews last week from the U.S. Drug Enforcement Administration.

The Oro Valley Police Department last year created the program, which puts on the monthly Dispose-A-Med Oro Valley event to collect expired or unwanted prescription medication.

A DEA official called prescription-drug abuse the fastest-growing threat to adolescents across the country and particularly in Arizona.

"We have the highest rate of prescription-drug abuse in all the 50 states," said Anthony Coulson, assistant special agent in charge of the DEA Tucson District Office.

Many painkillers such as OxyContin, Vicodin and Valium are found in homes where young people easily can obtain them, Coulson said.

"The tragic result ... sometimes leads to the death of a child or a young adult."

Oro Valley started the program as officers encountered increasing numbers of young heroin users who initially became addicted to pain relievers such as OxyContin. Some have died of overdoses.

The Oro Valley Police Department and its partners last year collected 150 pounds of prescription drugs, said Chief Daniel Sharp. He received a plaque from the DEA for his department's efforts.

"We're seeing just incredibly high-powered narcotics coming in," Sharp later said.

The DEA incinerates the drugs.

So far this year, the program has collected 130 pounds, Officer Shawn Benjamin said.

High school students also have dropped off leftover OxyContin their dentists had prescribed, she said.

Through a partnership with Pima County Wastewater, the Oro Valley program also aims to keep medications out of the water. In addition to the DEA and Pima County Wastewater, other program partners include SOBER Project, Meth Free Alliance, Oro Valley Optimist Club and Golder Ranch Fire District.

GET RID OF UNWANTED medications

The next Dispose-A-Med Oro Valley will be held from 10 a.m. to 2 p.m. March 20 at Target, 10555 N. Oracle Road.

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February 28, 2010

# Rulings Restrict Clean Water Act, Foiling E.P.A.

By CHARLES DUHIGG and JANET ROBERTS

Thousands of the nation's largest water polluters are outside the Clean Water Act's reach because the Supreme Court has left uncertain which waterways are protected by that law, according to interviews with regulators.

As a result, some businesses are declaring that the law no longer applies to them. And pollution rates are rising.

Companies that have spilled oil, carcinogens and dangerous bacteria into lakes, rivers and other waters are not being prosecuted, according to Environmental Protection Agency regulators working on those cases, who estimate that more than 1,500 major pollution investigations have been discontinued or shelved in the last four years.

The Clean Water Act was intended to end dangerous water pollution by regulating every major polluter. But today, regulators may be unable to prosecute as many as half of the nation's largest known polluters because officials lack jurisdiction or because proving jurisdiction would be overwhelmingly difficult or time consuming, according to midlevel officials.

"We are, in essence, shutting down our Clean Water programs in some states," said Douglas F. Murrick, an E.P.A. lawyer in Atlanta. "This is a huge step backward. When companies figure out the cops can't operate, they start remembering how much cheaper it is to just dump stuff in a nearby creek."

"This is a huge deal," James M. Tierney, the New York State assistant commissioner for water resources, said of the new constraints. "There are whole watersheds that feed into New York's drinking water supply that are, as of now, unprotected."

The court rulings causing these problems focused on language in the Clean Water Act that limited it to "the discharge of pollutants into the navigable waters" of the United States. For

decades, “navigable waters” was broadly interpreted by regulators to include many large wetlands and streams that connected to major rivers.

But the two decisions suggested that waterways that are entirely within one state, creeks that sometimes go dry, and lakes unconnected to larger water systems may not be “navigable waters” and are therefore not covered by the act — even though pollution from such waterways can make its way into sources of drinking water.

Some argue that such decisions help limit overreaching regulatory efforts.

“There is no doubt in my mind that when Congress passed the Clean Water Act in 1972 they intended it to have broad regulatory reach, but they did not intend it to be unlimited,” said Don Parrish, the American Farm Bureau Federation’s senior director of regulatory relations, who has lobbied on Clean Water issues.

But for E.P.A. and state regulators, the decisions have created widespread uncertainty. The court did not define which waterways are regulated, and judicial districts have interpreted the court’s decisions differently. As regulators have struggled to guess how various courts will rule, some E.P.A. lawyers have established unwritten internal guidelines to avoid cases in which proving jurisdiction is too difficult, according to interviews with more than two dozen current and former E.P.A. officials.

The decisions “reduce E.P.A.’s ability to do what the law intends — to protect water quality, the environment and public health,” wrote Peter S. Silva, the E.P.A.’s assistant administrator for the Office of Water, in response to questions.

About 117 million Americans get their drinking water from sources fed by waters that are vulnerable to exclusion from the Clean Water Act, according to E.P.A. reports.

The E.P.A. said in a statement that it did not automatically concede that any significant water body was outside the authority of the Clean Water Act. “Jurisdictional determinations must be made on a case-by-case basis,” the agency wrote. Officials added that they believed that even many streams that go dry for long periods were within the act’s jurisdiction.

But midlevel E.P.A. officials said that internal studies indicated that as many as 45 percent of major polluters might be either outside regulatory reach or in areas where proving jurisdiction is overwhelmingly difficult.

And even in situations in which regulators believe they still have jurisdiction, companies have delayed cases for years by arguing that the ambiguity precludes prosecution. In some instances, regulators have simply dropped enforcement actions.

In the last two years, some members of Congress have tried to limit the impact of the court decisions by introducing legislation known as the Clean Water Restoration Act. It has been approved by a Senate committee but not yet introduced this session in the House. The legislation tries to resolve these problems by, in part, removing the word “navigable” from the law and restoring regulators’ authority over all waters that were regulated before the Supreme Court decisions.

But a broad coalition of industries has often successfully lobbied to prevent the full Congress from voting on such proposals by telling farmers and small-business owners that the new legislation would permit the government to regulate rain puddles and small ponds and layer new regulations on how they dispose of waste.

“The game plan is to emphasize the scary possibilities,” said one member of the Waters Advocacy Coalition, which has fought the legislation and is supported by the American Farm Bureau Federation, the National Association of Home Builders and other groups representing industries affected by the Clean Water Act.

“If you can get Glenn Beck to say that government storm troopers are going to invade your property, farmers in the Midwest will light up their congressmen’s switchboards,” said the coalition member, who asked not to be identified because he thought his descriptions would anger other coalition participants. Mr. Beck, a conservative commentator on Fox News, spoke at length against the Clean Water Restoration Act in December.

The American Land Rights Association, another organization opposed to legislation, wrote last June that people should “Deluge your senators with calls, faxes and e-mails.” A news release the same month from the American Farm Bureau Federation warned that “even rainwater would be regulated.”

“If you erase the word ‘navigable’ from the law, it erases any limitation on the federal government’s reach,” said Mr. Parrish of the American Farm Bureau Federation. “It could be a gutter, a roadside ditch or a rain puddle. But under the new law, the government gets control over it.”

Legislators say these statements are misleading and intended to create panic.

“These claims just aren’t true,” said Senator Benjamin L. Cardin, Democrat of Maryland. He helped push the bill through the Senate Environment and Public Works Committee. “This bill,” he said, “is solely aimed at restoring the law to what it covered before the Supreme Court decisions.”

The consequences of the Supreme Court decisions are stark. In drier states, some polluters say the act no longer applies to them and are therefore refusing to renew or apply for permits, making it impossible to monitor what they are dumping, say officials.

Cannon Air Force Base near Clovis, N.M., for instance, recently informed E.P.A. officials that it no longer considered itself subject to the act. It dumps wastewater — containing bacteria and human sewage — into a lake on the base.

More than 200 oil spill cases were delayed as of 2008, according to a memorandum written by an E.P.A. official and collected by Congressional investigators. And even as the number of facilities violating the Clean Water Act has steadily increased each year, E.P.A. judicial actions against major polluters have fallen by almost half since the Supreme Court rulings, according to an analysis of E.P.A. data by The New York Times.

The Clean Water Act does not directly deal with drinking water. Rather, it was meant to regulate the polluters that contaminated the waterways that supplied many towns and cities with tap water.

The two Supreme Court decisions at issue — *Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers* in 2001 and *Rapanos v. United States* in 2006 — focused on the federal government's jurisdiction over various wetlands. In both cases, dissenting justices warned that limiting the power of the federal government would weaken its ability to combat water pollution.

“Cases now are lost because the company is discharging into a stream that flows into a river, rather than the river itself,” said David M. Uhlmann, a law professor at the University of Michigan who led the environmental crimes section of the Justice Department during the last administration.

In 2007, for instance, after a pipe manufacturer in Alabama, a division of McWane Inc., was convicted and fined millions of dollars for dumping oil, lead, zinc and other chemicals into a large creek, an appellate court overturned that conviction and fine, ruling that the Supreme Court precedent exempted the waterway from the Clean Water Act. The company eventually settled by agreeing to pay a smaller amount and submit to probation.

Some E.P.A. officials say solutions beyond the Clean Water Restoration Act are available. They argue that the agency's chief, Lisa P. Jackson, could issue regulations that seek to clarify jurisdiction of the Clean Water Act.

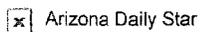
Mrs. Jackson has urged Congress to resolve these issues. But she has not issued new

regulations.

“E.P.A., with our federal partners, emphasized to Congress in a May 2009 letter that legislation is the best way to restore the Clean Water Act’s effectiveness,” wrote Mr. Silva in a statement to The Times. “E.P.A. and the Army Corps of Engineers will continue to implement our water programs to protect the nation’s waters and the environment as effectively as possible, including consideration of administrative actions to restore the scope of waters protected under the Clean Water Act.”

In the meantime, both state and federal regulators say they are prevented from protecting important waterways.

“We need something to fix these gaps,” said Mr. Tierney, the New York official. “The Clean Water Act worked for over 30 years, and we’re at risk of losing that if we can’t get a new law.”



## Claim: San Francisco giving gardeners toxic sludge

By EVELYN NIEVES | Posted: Friday, March 5, 2010 1:19 am

San Francisco wears its environmental consciousness like a green badge of honor. Residents separate and recycle their food scraps. Streets close to cars so people can walk and bike them. A city department even gives away "high-quality, nutrient-rich, organic bio-solids compost" to any and all takers.

But hold on there: A public interest and environmental advocacy group says San Francisco's free compost, used by community, backyard and school gardens in the Bay Area, is processed sewage sludge — the product of anything flushed, poured or dumped into the wastewater system, including industrial, chemical and pharmaceutical toxins.

"This sludge belongs in a hazardous waste dump," said Ronnie Cummins, national director of the Organic Consumers Association, before he poured some of the compost on carefully laid out plastic sheeting at the steps of San Francisco City Hall on Thursday.

The protest, he said, was the launch of an all-out campaign the organic foods movement is planning to wage against the use of bio-solids compost.

The San Francisco Public Utilities Commission, which manages the city's sewage treatment, says the 1 percent of the city's 80,000 tons of sewage that is converted into compost each year is treated and tested to the point of sterility.

San Francisco isn't even the only California city to have bio-solid giveaways, according to the Organic Consumers Association. Los Angeles, San Diego, San Juan Capistrano, Santa Rosa, Fortuna, Carlsbad, and Calabasas do the same.

Not only that, sewage or bio-solids compost is packaged and sold in major house and garden centers across the country. And fertilizer made from bio-solids is used on millions of acres of land throughout the U.S. where plants are grown, according to a report by the U.S. Geological Survey. That fertilizer is not treated and heated to the point where it becomes compost and is not used for human food crops, though it is used for animal food crops.

San Francisco's bio-solids compost has become the focal point for the issue precisely because the city is so environmentally aware, say organic groups.

"San Francisco as the greenest large city in the country should be the first to stop this," Cummins said.

Federally mandated testing shows that the compost has far lower levels of nine pollutants than the Environmental Protection Agency deems acceptable, San Francisco Public Utilities Commission spokesman Tyrone Jue said.

"We're in the business of protecting public health and the environment," Jue said. "That's our mandate and our mission statement. That's what we do. If for even a minute we thought one of our activities was going against that mandate, we would absolutely stop doing it."

But the problem, say groups like the Organic Consumers Association and the Center for Food Safety, is that the EPA requires testing only for nine metals, when there are potentially thousands of chemicals in the compost.

The EPA is evaluating if more pollutants need to be regulated, and believes additional studies are needed, said Lauren Fondal, an environmental engineer for the EPA office in San Francisco.

"I don't believe there have been any major studies of all these chemical that we've begun detecting," she said.

There is no hard science that bio-solids compost is perfectly safe, the organic groups say, while there is anecdotal evidence that it is not.

In 2008, for example, a federal judge in Georgia ruled in favor of farmers who sued the U.S. Department of Agriculture when their cows became ill and died after eating silage grown on land upon which the compost had been applied.

"The EPA cannot assure the public that current land application practices are protective of human health and the environment," U.S. District Court Judge Anthony Alaimo.

Last fall, The Center for Food Safety, a watchdog group with offices in Washington, D.C., and San Francisco, tried to raise awareness of the "bio-solids" issue when it petitioned San Francisco to end the compost giveaways.

The city made no promises. But the PUC did stop calling its free compost "organic." Under USDA rules, no sewage sludge compost, or farms that use bio-solids, can be called "organic."

On Thursday, when the Minnesota-based members of The Organic Consumer Association held their "toxic sludge giveback" at City Hall, five protesters were flanked by about a dozen reporters and curious passers-by.

One of those watching was Jue of the PUC. He said that the city still considers the compost giveaways a pilot project. The city has held six giveaways since 2007. Jue said it has none planned for the near future.

"Of course, if the public doesn't want it, we'll stop," he said.