

# New technology for groundwater emerges

By **Kelly J. Klausmeyer**

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**HAYS** – The extended drought across Kansas this year has cattle operations scrambling to find and secure water resources. Ponds and creeks across the state have been drying up and are being replaced with groundwater sources such as springs and wells. Windmills have been the traditional method for developing groundwater for many years now, but a relatively new technology is becoming more and more popular. That technology is solar.

Solar pumps come in many makes, models, and sizes. A typical solar pump installation will have three components: solar panels, an electronic pump controller and the pump itself. It is important that these components are compatible with each other. Most reputable solar pump suppliers provide the complete system that will work as intended.

Solar panels, also called photovoltaic panels, harness the sun's energy to create a voltage that can be used to operate the pump. Panels will produce at least some energy anytime the sun hits them. However, it is important to note that the solar panel will generate its peak energy rating only for part of the day. This peak sun energy is roughly six hours per

day in the summer, but reduced to about four hours per day in the winter for northwest Kansas.

Also important is panel angle. Panels are typically set at an angle that matches the latitude of the location if intended to be used year-round. For summer use only, the panel should be set 15 degrees flatter than the latitude; winter, 15 degrees steeper. This will ensure the panel receives the maximum amount of sunlight available for your location. Sun-tracking mechanisms are available but have not become popular mostly due to cost and maintenance concerns.

The panel mounting structure must be adequate to withstand all the environmental stresses that Kansas weather brings. Stands must be built heavily enough to withstand high winds.

Panels and electrical components must be protected from the sun, ice and snow. Panels must withstand hail, ice and wind storms. Several panel suppliers warranty their panels against hail damage.

The use of an existing structure to mount a solar panel is not usually recommended. Panels can be heavy and the load may be more than an old roof or windmill can withstand.

The electrical controller regulates the electrical power input to the pump and provides

electrical protection and switching. Controllers prevent the widely varying power that comes from solar panels from damaging the pump's electric motor.

The pump comes in two basic types: diaphragm pumps and helical shaft pumps. Both types are submersible and normally run on DC power, but some helical pump systems can also be set up to run on AC. Several different pump voltages are available. The general rule of thumb is that if the array consists

of four or more panels and they are located more than 50 feet from the pump, a higher voltage pump should be considered.

Choosing the correct size solar system for your location can be confusing. Please contact your local Natural Resources Conservation Service office or conservation district office located at your local county U.S. Department of Agriculture Service Center (listed in the telephone book under United States Government or on the Internet at [offices.usda.gov](http://offices.usda.gov)).

## Hunters help capture 50 pythons in Florida

**MIAMI (AP)** – More than 1,500 participants of a monthlong python challenge have helped to capture 50 Burmese pythons in the Florida Everglades.

The Florida Fish and Wildlife Conservation Commission updated the counts Tuesday for the "Python Challenge." The competition began Jan. 12 and ends Feb. 10.

The invasive snakes killed in the Everglades are processed and logged by University of Florida researchers who examine each

one hoping to learn more about the elusive species.

No one knows for sure how many pythons live in South Florida. Wildlife officials say eradicating pythons from the Everglades was never the goal of the challenge.

Instead, they hoped to raise awareness about the snake's threat to native wildlife and the fragile Everglades ecosystem. The snake faces both state and federal bans.

## Protection of public lands urged by former secretary

By **Matthew Daly**

*Associated Press*

**WASHINGTON (AP)** – Former Interior Secretary Bruce Babbitt is urging President Barack Obama to step up efforts to conserve public lands as he begins his second term.

Babbitt, who led Interior for eight years under President Bill Clinton, said Obama should adopt what Babbitt called a common-sense principle: For every acre of public land leased to the oil and gas industry, one acre should

be permanently protected for future generations. Over the past four years, more than 6 million acres have been leased for oil and gas, compared with 2.6 million acres permanently protected.

Babbitt said in a speech that adoption of the one-to-one principle would ensure that conservation is on equal standing with energy development.

The last Congress was the first since the 1960s not to protect a single acre of wilderness.

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