

November 2014

Kickapoo Environmental Office

The Green Clan



Working Together for a Better Community!
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Kickapoo Stream Monitoring Gage

The Kickapoo Environmental Office focuses on maintaining and monitoring surface water influences within the Delaware River Watershed in an effort to supply the tribe with healthy drinking water. To stay ahead of numerous environmental influences within the watershed, the KEO monitors several tributary streams throughout the reservation for habitat responses due to surface water run-off. These influences affect the presence or absence of specific macro invertebrate populations and chemical pollutants associated with sediment run-off.

Comprehensive habitat assessments are performed three times throughout each growing season; however, given the importance of the Delaware River

water supply to the Kickapoo Nation, the KEO pursued a way to increase the frequency of collected data by installing a water monitoring station.

In 2013, under the direction of Matt Bosworth and Luke Terry, the environmental office received a BIA grant for the purpose of installing a permanent stream gage monitoring station in the Delaware River. The station consists of a stream gage and satellite transmitter powered by a 20W solar panel. Readings are taken once every hour and those data are transmitted via GOES (Geostationary Operational Environmental Satellite) and are available for online viewing. The monitoring device, "EXO2," remains in the Delaware River most of the year, and is outfitted with 6 probes gathering data on 14 parameters affecting water quality (Image 1). The KEO will be able to compile these data with data from seasonal tributary assessments to develop a more comprehensive evaluation of surface run-off effects on the water quality in the Delaware River.

This project would not have been possible without the help of Matt Bosworth, Luke Terry, Kickapoo Tribal Maintenance, and the rest of the Kickapoo Environmental Office.



Agricultural Productivity: Good News and Bad News

The world's population is growing, and we have limited land for farming. Will we run out of food? That question has been discussed for decades. The short answer is: no, we will not run out of food. Why? Because agriculture is beating the odds.

Thanks to productivity growth due to technological changes, agriculture is growing just as fast. Even faster than the population. In fact, since the 1970's, world agricultural production has been increasing at an average of 2.3 percent per year. While in 1961 the world was feeding 3.5 billion people by cultivating 3.2 million acres of land, 50 years later, with the world population that has doubled to 7 billion people, agricultural production has tripled, even though land under cultivation increased only 12 percent. We are actually producing enough food to feed the world now, and some researchers argue even more would be available if we reduced post-harvest damage and spoilage, and consumer waste.

Even more encouraging today, more food is being produced where the most people are: in developing countries such as China and India. The 2010, developing countries accounted for 68 percent of global agricultural output, compared to 44 percent in 1965. Improved farming technologies and practices are the main source of this growth, and the possibilities for new innovations are practically endless.

Does that mean there is nothing to worry about? Not exactly. There are a couple of dark clouds hanging over this sunny story.

One is the steady and ongoing increase in commodity prices worldwide. In the last decade, food prices have gone up dramatically. At first glance it appears the demand for food is outweighing supply, causing the price to increase. However, recent hikes in commodity prices are not the result of a reduction in the world's capacity to produce food and keep pace with the growing demand,

but seems to be a consequence of changes in global commodity markets driven by the success of emerging economies.

According to the International Food Policy Research Institute (IFPRI) researchers, rising oil prices and the resulting growing demand for biofuels are part of the explanation. This creates a vicious cycle: land is used for biofuels instead of food, lowering the supply of food and raising its price. There are several things national governments and the international community can do to slow down this cycle, including encouraging open domestic policies and restricting biofuel production.

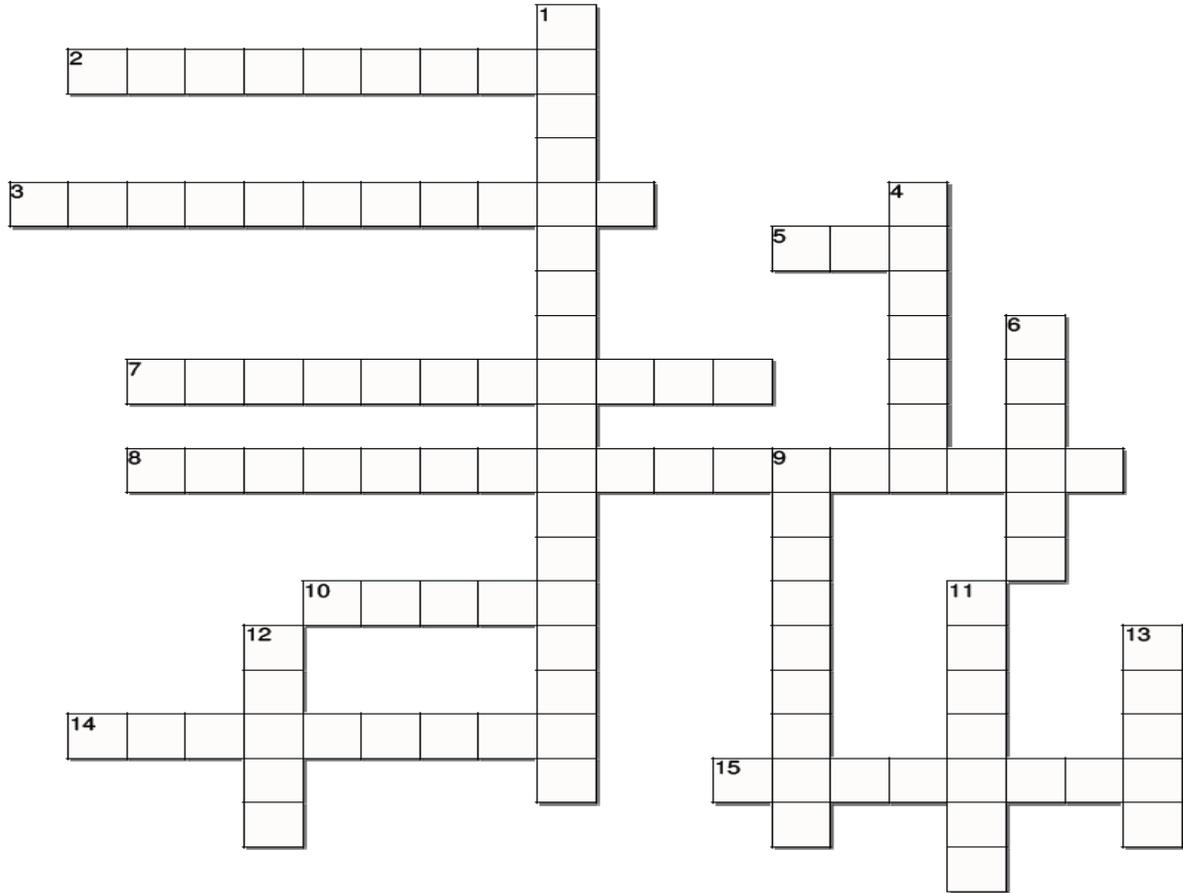
The second cloud over this optimistic scenario is about Africa. Although African countries south of the Sahara saw an increase in agricultural Gross Domestic Product (GDP) growth rate in the past decade, from 2-3 percent to 3-4 percent, this appears to come from a more efficient use of resources following policy reforms. To sustain this growth in the long run, African countries must step up their investments in agricultural research and development and infrastructure to find technological solution, such as improved seeds and inputs, and better farming practices that are tailored to work in the African ecology. This will also help the region develop input and output markets to increase participation in the world economy and take advantage of the opportunities offered by global commodity markets. This is crucial if Africa is to pull itself out of its current state of high poverty and food insecurity.

Despite these clouds, we do not have a problem producing food. We have a lot of food, with many options for increasing it. We just need to get it in the hands of those who need it.

This article was created by the International Food Policy Research Institute (IFPRI). For more information, see *Agricultural Productivity: A Changing Harvest* in IFPRI's 2012 Global Food Policy Report.



CROSSWORD PUZZLE



Across

2. A thing or substance that has harmful or poisonous effects.
3. The surroundings or conditions in which a person, animal, or plant lives or operates.
5. The invisible gaseous substance surrounding the earth.
7. A former industrial or commercial site where future use is affected by environmental contamination.
8. An event such as a flood, earthquake, or hurricane that causes great damage.
10. A colorless toxic gas with a pungent odor and powerful oxidizing properties, formed from oxygen.
14. A substance used for destroying insects or other organisms harmful to cultivated plants or to animals.
15. A tribe in Kansas.

Down

1. Animal or plant that is seriously at risk of extinction.
4. A prolonged period of abnormally low rainfall or a shortage of water.
6. The strength and vitality required for sustained physical or mental activity.
9. Precipitation that contains a high concentration of pollutants, sulfur dioxide and nitrogen oxide, released into the atmosphere by the burning of fossil fuels.
11. The weather conditions in an area in general or over a long period.
12. A colorless, tasteless liquid that forms the seas, lakes, rivers and rain.
13. Overflowing of a large amount of water beyond its normal confines.

UPCOMING EVENTS

FALL COMMUNITY CLEAN UP

December, 2014

Monday, 8th to Friday,

12th

Word Bank for Crossword Puzzle

Kickapoo

Acid Rain

Brownfields

Air

Water

Pollution

Environment

Ozone

Pesticide

Energy

Climate

Drought

Flood

Endangered Species

Natural Disasters