

Farmers Urged to Throw Away their Plows

Difficulty:

DIFFICULT

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Discussion activities to be done after completing this EA lesson

Today's report looks at alternative ways of farming that have been used recently to protect the environment in vulnerable areas. Which regions are concerned? What do these methods involve? What have researchers said about the results?

Extension discussion topics

A. Talking about and going over the specific topic / idea / issue in listening text

Introduction = What details of the new approach to farming can you remember, where has it recently been adopted, and why?

1. What is the new farming approach called? Can you describe it?
 - strip tilling / strip till system.
 - only a narrow strip of soil is plowed / tilled / turned / prepared for planting.
 - seeds and fertilizer are put into this long strip / row.
 - the parts of the field between these strips are left alone, with organic matter such as wheat straw or corn stalks covering the soil.
2. Where has it been adopted recently, and how can it help the environment there? What does the report say about the present and past vulnerability of this region?
 - the report features its adoption in the area around Lubbock, Texas, US.
 - the organic matter helps retain moisture in the soil, and protects it from the sun and high winds.
 - leaving the soil covered keeps it from drying out, turning to dust and being carried away by the wind (wind erosion).
 - this year's record-breaking drought and heat led to an enormous cloud of dust 2km high that blew through Lubbock in October.
 - the area was devastated when a drought dragged on through the 1930s, and previously fertile soil turned to dust and blew away. This is known as the Dust Bowl era.

3. What details do you remember about the people who were interviewed in the report?
- Salvador Salinas is the Texas state conservation chief. He thinks it is unlikely that such dust storms will become a common occurrence again in Texas.
 - Bram Govaerts (originally from Belgium - detail not mentioned in the report) heads the conservation agriculture program at the International Maize and Wheat Improvement Center. He recommends that farmers stop using plows, and adopt the strip till system. He says that certain areas of Mexico have suffered from soil erosion in the same way and can no longer be farmed. His center is helping design strip tilling equipment for small-scale farmers in developing countries.
 - David Ford is a farmer who used the strip tillage approach in the 2011 growing season. He is satisfied with the results, and also says that he has saved money in fuel costs and reduced wear-and-tear on his equipment.
 - Brandt Underwood is an agronomist with the US Department of Agriculture. He is certain that strip tilling in that area has made a considerable difference to crop yield in a drought year.

B. Expanding on (one of) the topics / ideas / issues in listening text

Topic = Dust Storms and the Dust Bowl era.

1. Have you heard of the Dust Bowl before? What did you already know about it, and when did you learn this? Have you seen photos or documentaries about it? Describe what you remember to your teacher / to the group.
2. Have you heard of the singer Woody Guthrie? He was born in 1912 in Oklahoma, a state which also suffered devastation in the Dust Bowl. Do you know anything about his life, or his songs? Have you ever heard any of his Dust Bowl songs?
http://en.wikipedia.org/wiki/Dust_Bowl_Ballads
3. Have you ever been in a dust storm? If so, where were you? How long ago was it? How long did it last? Describe how it felt. If not, do you know anyone who has told you of their experiences in a dust storm?
4. Some people live in sandy desert areas where dust storms are common. What do you think the biggest problems are in or after a dust storm? What precautions do you think the people might take to minimize these problems?

OR, Topic = Dust Bowl and its heritage.

Find out all you can about the 1930s Dust Bowl era in the US Great Plains, and present what you learn to your teacher or your group.

You could start here: http://en.wikipedia.org/wiki/Dust_Bowl.

There are also a great many film clips with commentary on You Tube, for example:

http://www.youtube.com/watch?NR=1&v=1_nG9LX01oo Dust Bowl Memories.

<http://www.youtube.com/watch?NR=1&v=fyB58Ghy2Eo> The Dirty Thirties.

OR

Look at the list of Woody Guthrie's Dust Bowl songs on:

http://en.wikipedia.org/wiki/Dust_Bowl_Ballads

Using Youtube and Google to find both the music and the lyrics, choose one of the ballads and present it to the group.

C. Extending discussion of (one of) the topics / ideas / issues in listening text

Topic = Protecting vulnerable environments.

1. The strip till system is the latest of various methods that have been used in Texas to improve the environment since the 1930s and to protect the area from wind erosion. What other methods do you know of that are used to protect places from wind erosion?
2. In areas with very heavy rainfall, in what ways can the land be protected from soil erosion or flooding?
3. What particular measures should be taken in areas with frequent earthquakes or volcanic activity? Can you give examples of places where such measures have successfully limited damage? Or where such measures have not been taken, leading to devastation?
4. "Millions fled the US Great Plains during the Dust Bowl era, as their livelihoods literally blew away." Should people continue to live in vulnerable environments? Why / why not? Explain your answer.

Audioscript

An enormous cloud of dust two kilometers high blew through Lubbock, Texas, this October, after months of record-breaking drought and heat.

The dust storm brought back memories of the 1930s Dust Bowl era, when frequent and severe storms devastated the region. When farmers settled the US Great Plains in the late 1800s, they found seemingly endless expanses of fertile soil. But a 1936 documentary called "The Plow that Broke the Plains" looked back at how that fertile land turned to dust in the region's difficult climate.

"High winds and sun. High winds and sun. A country without rivers and with little rain. Settler - plow at your peril."

The settlers did plow, for generations, carving up the soils of the Great Plains to prepare them for crop after crop of wheat. But the ground was so broken up that when a severe drought dragged on through the 1930s, the wind easily carried the soil away. Millions fled the region as their livelihoods literally blew away in the dust storms.

But while last month's storm was severe, a return to the Dust Bowl days is unlikely, says Texas state conservation chief Salvador Salinas.

"We have come a long way from those days where we had these occurrences as a common occurrence."

One reason dust storms were more common in the 1930s, experts say, is that plowing was more common back then. Farmers around the world use the plow to control weeds and to prepare the land for planting. But wherever the soil is tilled, it is more vulnerable to erosion, whether by high winds in the US Great Plains, or by rain in many other parts of the world.

Bram Govaerts has seen the impacts of erosion in Mexico, where he heads the conservation agriculture program at the International Maize and Wheat Improvement Center.

"There is a percentage of area in certain states of Mexico where farming is no longer possible because we already eroded those areas." So Govaerts suggests a different approach. "Throwing away the plow. No longer plowing. No movement of soil."

In the Texas High Plains, that means farmers use special equipment to till just a strip of soil where the seed and fertilizer go. The rest of the field is left alone. And the stalks and leaves they used to till under, they now leave behind, says farmer David Ford.

"Everything in between these rows is the organic matter left from the wheat straw, which helps keep the ground covered, reduces soil erosion."

Keeping the ground covered helps shield the precious soil from wind and sun, and keeps moisture from evaporating. In this year's extreme drought and heat, minimal tillage and maximum cover made a big difference, says Brandt Underwood, an agronomist with the U.S. Department of Agriculture.

"I think it made a huge difference. It's my opinion that the strip till system right here and the residue management is what's enabled David to produce this kind of corn crop in this drought-type year."

David Ford adds that plowing less also saves him money.

"We don't have to burn the fuel that we used to burn. Our equipment will last longer."

And strip tilling is not just for big American farms. Bram Govaerts' center is helping design equipment for small-scale farmers in developing countries.

"We want to have machines locally built so that the local small businesses also get better from the improved technologies."

Research shows farmers get as good or better yields using these methods while saving money on their production costs. That means when it comes to the age-old practice of plowing, less really is more.

Steve Baragona, VOA News.