



United States Department of Agriculture

Natural Inquirer Reader Series



Meet Dr. Sun!

Photo: Ge Sun, Forest Service



Forest Service

FS-1028b

April 2014

Meet Dr. Sun!

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Glossary words are in **bold**.

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<http://www.naturalinquirer.org>



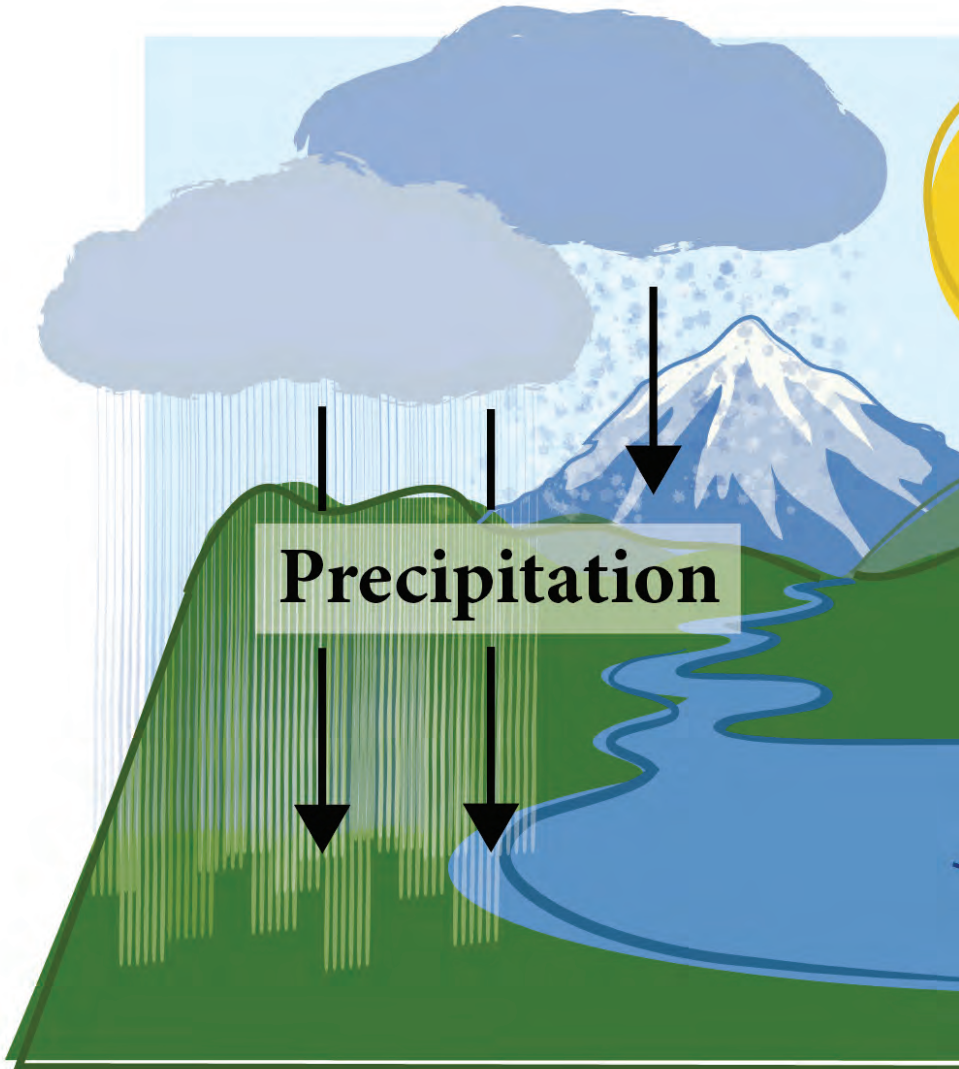
This is Dr. Ge Sun.

däk-tər jē sun



Photo: Ge Sun, Forest Service

Dr. Sun is a scientist who studies the **water cycle**. He also studies changes in the **environment**.



The water cycle shows how water falls to Earth and **evaporates** back to the **atmosphere**.

A diagram illustrating the water cycle. At the bottom, a blue lake with a white sailboat is shown. Two vertical lines rise from the lake, labeled 'Evaporation'. These lines lead to two black arrows pointing upwards towards a white cloud. The cloud is labeled 'Condensation'. A yellow sun is visible in the top left corner of the scene. The background consists of green hills and a light blue sky.

Condensation

Evaporation

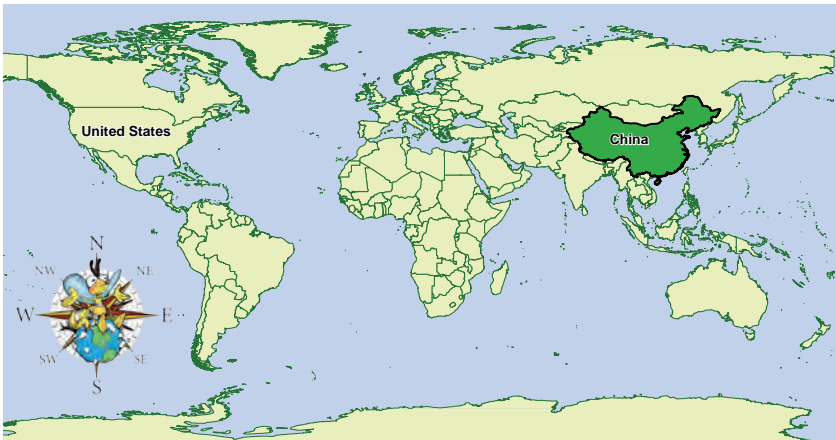
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Dr. Sun thought science was fun
in high school.



Photo: Ge Sun, Forest Service

This is Dr. Sun in high school. He was
15 years old. He lived in China.



www.naturalinquirer.org
Cartographer: Lindsay Ghann 2014

China is a long distance from the United States.
Can you find China on a globe?

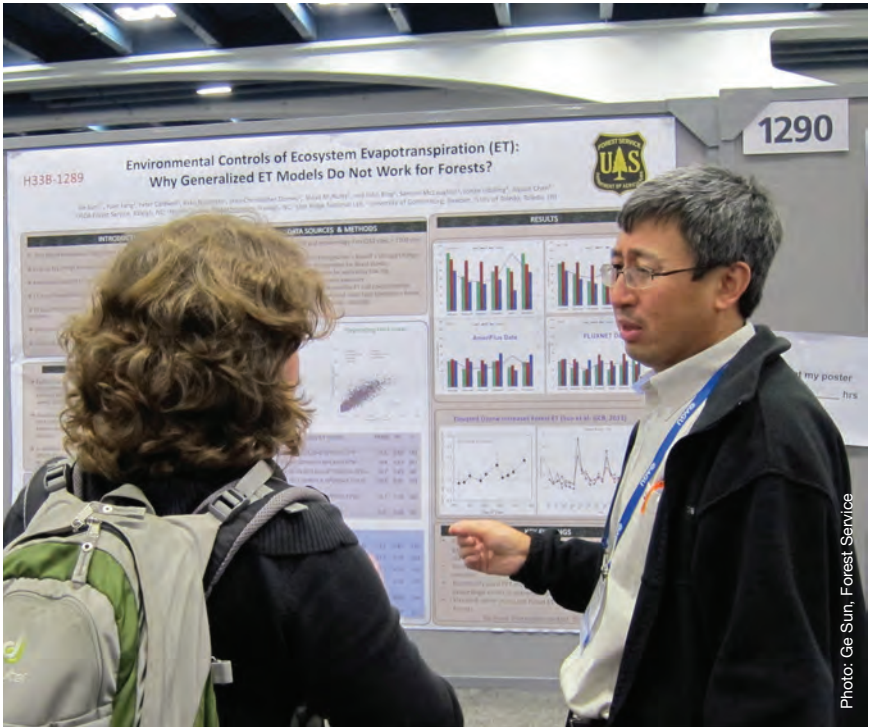
Dr. Sun is **patient**. He is a **hard worker**.



Photo: Vanderbilt Center for Science Outreach

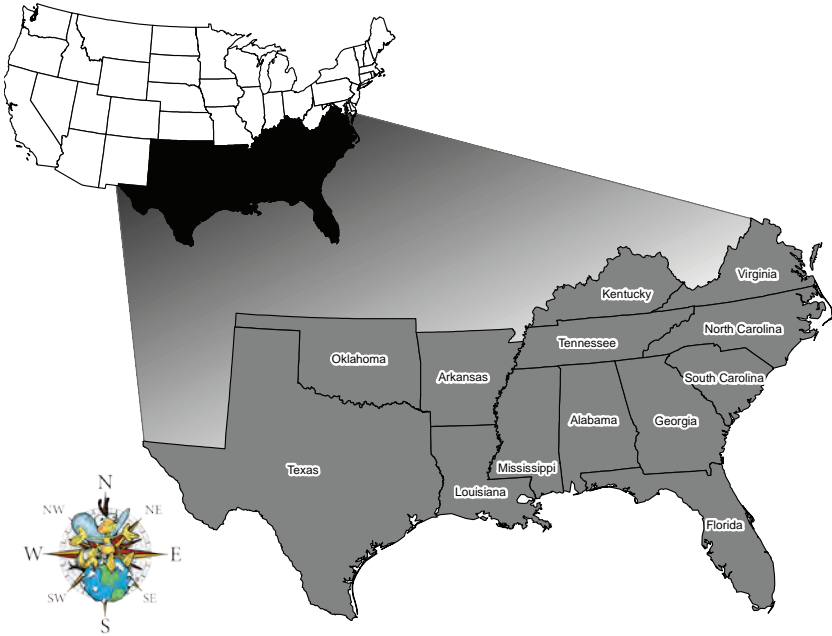
This student is a hard worker too.

Dr. Sun likes to ask questions about our world. Dr. Sun asked a question about changes in the environment.



Dr. Sun talks with others about his questions.

He was interested in changes in the Southern United States.



Dr. Sun was interested in changes happening over a long time—more than 100 years!

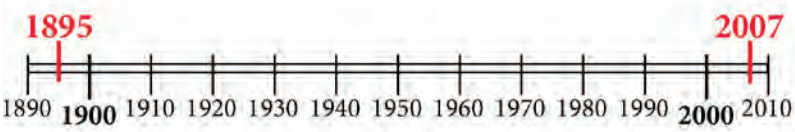
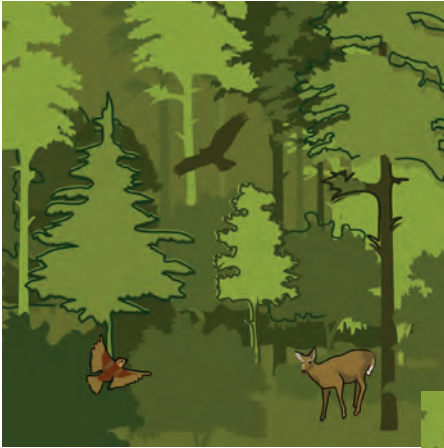


Photo: Babs McDonald



Photo: Babs McDonald

Dr. Sun studied changes in **land use**. These changes happened over more than 100 years.



1870s



1920s



1940s



1960s



1980s



2000s

People change the land to meet their needs.

Dr. Sun asked two questions: “How have humans changed the land over time? How did these changes help or hurt the environment?”



Photo: Babs McDonald



Photo: Babs McDonald

Dr. Sun used a computer to help him answer his question.



Dr. Sun discovered that land use changes can hurt the environment. He also discovered that some land use changes can help the environment.



Photo: Babs McDonald



Photo: Babs McDonald

Name two things you can do to help the environment.



Photo: Jessica Nickelsen

This student wants to help the environment.

Critical Thinking Questions:



- Name two States in the Southern United States. Do you live in the Southern United States? If not, where do you live?
- List different land uses that you **observe** around your school or home. How do you think each land use helps or hurts the environment?
- Dr. Sun likes to ask questions. Why do you think it is important to ask questions?

Glossary:



data (**dā**-tə): Facts and figures about something.

environment (n-**vī**-rə(n)-mənt): The surroundings in which a person, plant, or animal lives.

evaporate (i-**və**-pə-rāt): To turn into vapor.

land use (**land yūs**): The types of things an area of land is used for. One example is using land to grow corn. Another example is using land to build a school.

observe (əb-**zərv**): To watch something.

patient (**pā**-shənt): Able to wait calmly.

water cycle (**wä**-tər sī-kəl): The process by which water travels around and through Earth and its atmosphere. Water from rivers and oceans evaporates into the air (evaporation), where it gathers to form clouds (condensation). The water then falls as rain (precipitation) and snow to fill the rivers and oceans. The process of evaporation, condensation, and precipitation repeats over and over again. It is a cycle.

Try This!



Dr. Sun wanted to learn more about changes in land use. For each photograph on pages 20-22, tell how the land is being used. Then tell how you think the land use helps and hurts the environment. Discuss your answers with a friend. Be ready to explain how you think each land use helps and hurts the environment.



Photo: U.S. Department of Agriculture



Photo: James Holland



Photo: Bais McDonald



Photo: Babs McDonald



Photo: Babs McDonald



Photo: Babs McDonald

Natural Inquirer Reader Series

Number 2

Grades K–2

Word Count: 354

Genre: Nonfiction

Background Information: Different land uses can affect the environment in different ways. When pavement is poured, for example, the air above it is warmer than the air above vegetation, making the area slightly warmer overall. Pavement prevents rain from entering the ground and allows pollutants to wash into streams and rivers. Pavement, therefore, is a land use that can hurt the environment. When people let forests grow, or plant small organic gardens, the environment can be helped because natural nutrients are added and erosion is controlled. In this reader, students learn about land use and are challenged to observe how the land is used around them. For more information, read “Everything But the Carbon Sink” in *Natural IQ*, Southern United States Climate Change edition, <http://www.naturalinquirer.org>.

Note: For more background information and a lesson plan, visit <http://www.naturalinquirer.org> and click on “*Natural Inquirer* Reader Series.”

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Be a Possibility Possum

Scientists make things possible;
They ask and answer questions.
You can make things possible
If you follow these suggestions.

Observe your world and wonder;
Ask how, what, why, and who?
Ask and answer questions
To make things possible for you.

Wonder is a good thing;
It is very plain to see.
When I ask and answer questions,
I make things possible for me.

