

HYDROLOGY WITH PROFESSOR LIXIN WANG

TALKING POINTS

KNOWLEDGE

1. What are drylands, and where can you find them?
2. How are some beetle species in the Namib Desert adapting to extremely dry environments and climate change?

COMPREHENSION

3. What is the difference between fog and dew?
4. How can plants harvest the water contained in fog and dew?

APPLICATION

5. Imagine you are a hydrologist studying dew. Describe the steps you would take to gather high quality samples during fieldwork.
6. How would you then determine the origins of water molecules in your samples?
7. If you were a hydrologist, what water-related challenge facing the world would you want to address?

ANALYSIS

8. What evidence did Lixin find that disproved previous theories about the source of fog in the Namib Desert?
9. Why does this result suggest that life could become harder in dryland ecosystems in the future?

EVALUATION

10. To what extent do you think that human influences (other than climate change) could increase the challenges faced by dryland ecosystems?
11. What steps could be taken to ensure sustainable management of dryland ecosystems?

ACTIVITIES YOU CAN DO AT HOME OR IN THE CLASSROOM

Using materials available at home or school, create your own dew collector. Leave it outside for a week and record the volume of dew it collects each night. Alternatively, leave a car parked outside (not inside a garage) and use dry paper towels to collect dew water from the windscreen every morning. By checking your local weather forecast, create a chart showing how the amount of dew collected each night changes with temperature and humidity. Repeat your experiment at different times of the year. What conditions result in high quantities of dew forming?

MORE RESOURCES

- Watch Lixin discuss some of his other research after winning the IUPUI Research Frontiers Trailblazer Award: youtu.be/PemCpeHkZzU
- Read the World Water Day National Science Foundation report about Lixin and Farai's work on fog in the Namib Desert: www.nsf.gov/news/news_summ.jsp?cntn_id=191206&org=NSF&from=news
- Check out this article describing Lixin's conclusions about the formation of 'fairy circles' in the Namib Desert: news.iu.edu/stories/2017/03/iupui/releases/28-fairy-circles-namibia.html



Lixin and Farai installing the fog collector