

8. RESEARCH:

Scientists pinpoint areas most vulnerable to climate change and habitat loss

Elspeth Dehnert, E&E reporter

Published: Tuesday, July 29, 2014

A team of scientists has identified regions that should be top conservation priorities due to being susceptible to both man-made climate change and habitat destruction. Their [research](#) was published yesterday in the journal *Global Change Biology*.

The researchers analyzed to what extent regions with very few protected areas and high levels of habitat loss -- due to things like urbanization, agriculture and deforestation -- are vulnerable to a shift in vegetation caused by climate change, known as a "biome shift."

"Climate change, because it's warming the Earth, tends to shift biomes [rainforests, tundras, deserts, etc.] towards the poles or equator," said Patrick Gonzalez, a study author and National Park Service climate change scientist.

"The biome shifts are a very fundamental change in the ecosystem," he added. "It doesn't affect just one or two species; a whole set of species need to change for a biome to shift."

According to Gonzalez, one-third to one-half of the world's vegetated area is susceptible, compared to just one-tenth of the vegetated areas located in potential "refugia," or biologically diverse areas less affected by climate change.

For example, the study found that Europe is the most vulnerable continent due to having the least amount of its land area located in refugia.

"The problem with Europe is that it doesn't have many areas that are intact compared to other areas like the Congo Basin, where there are large intact forested areas," said Jadu Dash, a study author and Southampton scientist.

Adapting to 'future conditions'

In regions like Africa, Australia and South America, where there is expansive and intact wilderness, the authors suggest that conservation of the remaining large-scale refugia should be the priority, whereas in human-dominated areas with less expansive wilderness -- like most of Europe and much of Southeast Asia and North America -- the focus should be on the smaller-scale refugia.

"Organizers in Europe should make sure to protect the limited amount of refugia in Europe," Dash said. "It's difficult to go back and increase the area, but we can conserve what we already have."

While the researchers determined that 10 to 28 percent of the world is located in potential refugia, they found 1 to 2 percent of the world's vegetated area is currently in existing refugia and under the protection of a national park.

The study determined that up to one-quarter of the total area of the U.S. National Park System is at risk of having its vegetation shift northward and upslope, with North Cascades and Mount Rainier national parks in Washington state being particularly vulnerable.

"Up until now, the management of national parks has often focused on returning to historical conditions," Gonzalez said, "but climate change is shifting everything around, so that really requires us to adapt our management of natural and cultural resources to potential future conditions."

Twitter: [@ElspethDehnert](#) | Email: edehnert@eenews.net

1. POLICY:

White House warns that delaying climate action will cost billions more

2. REGULATION:

In advance of public hearings, friends and foes weigh in on EPA Clean Power Plan

TODAY'S STORIES

3. POLITICS:

Many Republicans did a U-turn on environmental issues in early 1990s -- study

4. REGIONS:

Southern Alaska faces big socio-economic blow from ocean acidification -- study

5. CALIFORNIA:

Gov. Brown signs pact to work with Mexico on carbon pricing and other climate, environmental programs

6. EMISSIONS:

Green group charges that calling forest-based fuels 'carbon neutral' is false advertising

7. RISK:

Damages from extreme weather are rising, led by floods, then droughts

8. RESEARCH:

Scientists pinpoint areas most vulnerable to climate change and habitat loss

9. RESOURCES:

Efforts to reduce water use in power sector can also cut carbon emissions

10. SCIENCE:

Rising amount of heat-trapping water vapor in atmosphere is caused by human activity -- report

11. AVIATION:

U.S. representative optimistic about U.N. plan to curb airline emissions

12. AGRICULTURE:

Drought pushes Calif. farmers to drill deeper for water

13. NATIONS:

As China grows and its diet changes, refrigeration demands will affect global warming

14. PUBLIC HEALTH:

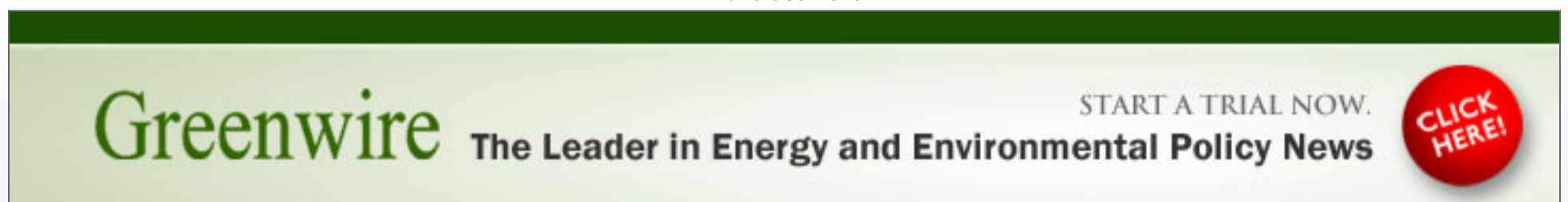
Australian think tank warns of effects of climate change on public health

E&ETV'S ONPOINT


15. BIOFUELS:

Algae industry groups' Carr presses EPA to include algae carbon capture in final emissions rule

Advertisement



Greenwire The Leader in Energy and Environmental Policy News

START A TRIAL NOW. 



The Premier Information Source for Professionals Who Track Environmental and Energy Policy.

© 1996-2014 E&E Publishing, LLC [Privacy Policy](#) [Site Map](#)