

Advisers knock Katrina health tests

WASHINGTON DC

The Environmental Protection Agency (EPA) is under fire for the way it responded to the flooding of New Orleans after Hurricane Katrina.

Members of the agency's science advisory board have complained that the EPA had no plan for how to respond to such a disaster and that the first tests it carried out were inappropriate. And scientists and environmental groups are concerned that — nearly two months after the disaster — the agency is still not providing returning residents with information on mid- to long-term health risks.

The EPA, based in Washington DC, was criticized in 2003 for its response to the World Trade Center attack on 11 September 2001. After an investigation into concerns that it had downplayed the respiratory dangers following the collapse of the towers, EPA inspector-general Nikki Tinsley warned the agency that it needed to take responsibility for giving the public reliable advice on health risks after any future disasters. "The EPA needs to be prepared to assert its opinion and judgment on matters that impact human health and the environment," said Tinsley.

But according to the EPA's own science advisory board, the agency has not learned from its mistakes. When New Orleans flooded, the agency did not have an emergency plan in place, and did not test for many immediate health threats, such as the pathogens *Vibrio cholerae*, *Escherichia coli* O157, and *Salmonella* spp., which often contaminate floodwaters. Instead the agency stuck to its normal tests, including measuring pesticides and metals known to cause a long-term risk.

"The EPA would be well advised to put more thought into response plans that are different from the standard operating procedure," Granger Morgan, chairman of the EPA's science advisory board, told *Nature*. "We are going to have a lot more Katrina-like events in the future. It would be good to have a well developed plan for rapid response."

Morgan and other members of the advisory board were so unimpressed with the EPA's performance, they are carrying out their own study into how the agency can develop plans for quick and targeted responses to various kinds of disaster. They will present it to the agency within a couple of weeks.

However the EPA's William Farland defends its response. He says that the agency tested for faecal matter and that even if more specific tests had been carried out, the health advice — "steer clear of the water" — would have been

IMAGE
UNAVAILABLE
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REASONS

The Environmental Protection Agency is accused of failing those returning to sodden homes in New Orleans.

the same. "We would not have done anything particularly different if we had looked at a whole suite of biologicals," he says.

Now that the floodwaters have receded, environmental groups and others are voicing concern about the EPA's ongoing response. The EPA says it is gathering information on short-term risks, looking for levels of chemicals that would be dangerous over time periods of

up to a few days. It has concluded that almost all of its hundreds of samples of water, air and muck would not cause immediate harm. And so far there have been no widespread outbreaks of disease.

But as residents return to the city, many observers feel the agency should be turning its focus to longer-term health risks.

"If you are just looking at a scenario for a


POLLUTION MAKES FOR MORE GIRLS

Dirty air skews sex ratios in Sao Paulo, finds Brazilian team.

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person who comes in for one day, you come to a different conclusion than if you look at people who are living here," says Gina Solomon of the Natural Resources Defense Council (NRDC), an environmental lobby in Washington DC. Solomon is worried about carcinogens in the soil such as arsenic, which may have leached from building materials, and polycyclic aromatic hydrocarbons, known as PAHs. Such toxins could be present at levels that do not pose a short-term risk, but that far exceed residential standards. "The soil is starting to resemble industrial soil," she says. "If children are coming back to play in those yards, it is really not OK."

Another health concern is the mould rampant in people's houses. "The walls are green and purple and black," says John Pardue, an environmental engineer at Louisiana State University in Baton Rouge. The EPA and other agencies are not testing the mould, saying the priority is simply to get rid of it. But Pardue,

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Solomon and others are worried that people could be harmed by trying to remove swathes of mould without respirators.

Critics are also upset that the EPA has expressed no opinion on whether it is safe to return to the city, and has said the decision is for local officials to make. "The buck should stop at the desk of the EPA administrator on whether people should return to New Orleans and other affected areas," says Erik Olsen, senior attorney in the NRDC's health programme.

"The EPA has a duty to protect people from known contamination," adds Robert Verchick, professor of environmental law at Loyola College, temporarily headquartered in Houston, Texas, and a research scholar at the Center for Progressive Reform. "It is aware that in some places the contamination exceeds its residential and in some cases two-week standards."

The EPA says it is spreading the word about possible risks through radio announcements, flyers and door-to-door chats. Their website also contains hundreds of air and sediment measurements, although all are presented in the context of short-term exposure.

Earlier this month, the office of the inspector-general at the EPA announced that it will carry out three evaluations of the agency's response to Katrina, one of which will focus on whether good information about safety is being gathered and passed on to the public. ■

Emma Marris

Ministers agree to act on warnings of soaring temperatures in Africa

JOHANNESBURG

African governments need to take urgent action to adapt to global warming. That was the message of 60 researchers who met with policy-makers in Johannesburg last week. Although they did not recommend specific courses of action, the scientists described the ecosystems and people in the continent likely to be worse affected, in the hope that politicians will help work out how to soften the blow.

"We urgently need to determine how we can adapt to climate change, and what the most appropriate interventions should be," says zoologist Steven Chown from the University of Stellenbosch, South Africa.

Temperatures in Africa have risen up to 1°C in the past century and, even if the emission reductions of greenhouse gases agreed by the Kyoto Protocol are achieved, temperatures could rise a further 2–3°C by 2050, according to climatologist Bruce Hewitson of the University of Cape Town.

Studies into the likely consequences of global warming for Africa are patchy, and so far have tended to focus on South Africa, where science is best funded, and on researchers' existing interests, such as changes to biodiversity. But those at the conference said they are beginning to build a picture of Africa's problems.

One consequence of increasing temperatures is the advance of invasive species. On Marion Island in the southern Atlantic ocean, for example, Chown and his colleagues have shown that indigenous species of springtails (*Collembola*) are declining in number, and invasive ones are increasing. Apparently, the indigenous species prefer cooler temperatures.

Hewitson predicts that reduced rainfall, expected to accompany the rise in temperature, will have severe effects on biodiversity. South Africa's dry west, for example, includes two regions with particularly diverse plant species. These are the Fynbos and the Karoo of South Africa, in which species numbers are predicted to fall as temperatures rise. Wendy Foden, a biologist at the South African National Biodiversity Institute in Pretoria, spoke about the recent decline of the quiver tree (*Aloe dichotoma*). This conspicuous succulent is disappearing in the north of its range in northern

Namibia, and at lower altitudes, as temperatures rise. It cannot establish itself in the cooler south because the rains are not heavy enough.

Animals are generally less vulnerable to changing conditions because they can migrate, but those in fenced reserves could be in trouble. Ecologist Norman Owen-Smith from the University of Witwatersrand, Johannesburg, followed roan antelope, sable antelope, eland and tsessebe in South Africa's Kruger National Park. He found that in two decades they had all declined in number and suggests that this may be because inappropriate responses to reduced rainfall have altered the habitat.

As well as being a conservation concern, changes in biodiversity could directly affect fishing, agriculture and tourism. For example, William Bond, a botanist at the University of Cape Town, has documented an increase in tree cover in the eastern part of South Africa over the past 50 years. More trees are bad for tourism as they make game less visible, and bad for farmers because there is less land for grazing. Bond thinks that increased carbon dioxide levels are causing saplings to grow faster, reducing the amount of time that they are vulnerable to bushfires, although this needs to be tested directly.

And others presented evidence that accessible fish stocks have already dropped by 30% in Lake Tanganyika in Tanzania. John Reynolds from Simon Fraser University in Vancouver, Canada, says reduced rainfall means fewer nutrients reach the surface waters.

In South Africa at least, the government seems to be listening. More than 500 policy-makers attended the meeting, including deputy president Phumzile Mlambo-Ngcuka. South African ministers responsible for environment, energy, agriculture and water each promised to outline proposals to mitigate the effects of climate change. "It was wonderful to see the strong commitments made," says Reynolds. "The key is to convert these concerns into effective action."

For African countries with fewer resources and scientists than South Africa, that challenge will be even greater. ■

Michael Cherry