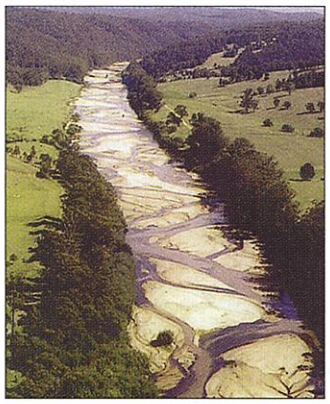
Australia Thirsts for Water Reform



Snowy River now a trickle.

Australia plans to spend $720 million over the next 7 years to combat rising salinity that is threatening the country's agriculture and drinking water. The program, announced last month by the national government and endorsed last week by the state governments, will plant trees, promote new farming practices, and explore engineering solutions including pumping salt water back into the ocean. "Business as usual is no longer an option," says ecologist Graham Harris, chief of land and water for the government's Commonwealth Scientific and Industrial Research Organization.

Two hundred years of channeling and damming have combined with the country's unique hydrology to exact a heavy toll, say scientists. Hydroelectric dams have turned rivers like the iconic Snowy into shallow streams studded with sandflats. The destruction of reed beds and ponds that once served as natural filters have led to heavy siltation and alga growth as well as the loss of native fish.

A new book, *Running Down*, by paleoenvironmentalist Mary White, has focused public attention on the problem. Australia, she writes, is "the oldest, driest, flattest, and most worn-out landscape on Earth." For millions of years winds blew ocean and lake salt around the country—salt that could not be purged by the flat, slow-flowing rivers. Only 6% of the land is arable; much of that is now turning into salt desert.

The new National Action Plan for Salinity and Water Quality, to be spelled out next month, is to focus on 20 regions where the problems are especially severe. The Victoria and New South Wales governments are also weighing a 10-year, $160 million plan for restoring Snowy River to 28% of its predam flow.

But White says far more drastic changes are needed. Irrigation is still bleeding rivers and raising salt levels, she says, and "we're still cutting down trees in Queensland faster than in the Amazon. We've learnt nothing."

Structural Failure

A Japanese archaeologist has stunned the community by admitting that he planted primitive stone tools at a dig so his team could get credit for discovering the oldest stone artifacts in Japan.

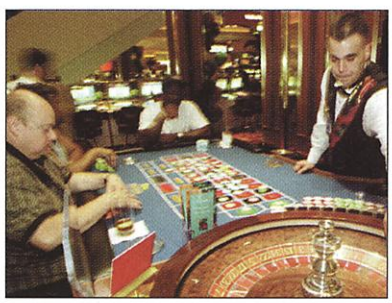
On 23 October, researchers led by Shinichi Fujimura, deputy director of the private Tohoku Paleolithic Cultural Research Institute, announced finding rings of postholes and stone tool cache pits at a site in Kamitakamori, at the northern end of Honshu, Japan's main island, during this summer and fall. Volcanic ash found above the finds was dated to 570,000 years ago by paleomagnetic and thermoluminescent dating, making the structures and the tools among the oldest ever found in Japan. Fujimura, 50, is an amateur whose ability to consistently come up with important artifacts has made him famous but also aroused suspicions.

Outlines of postholes are visible at tainted site.

On 5 November, the *Mainichi Shimbun* newspaper reported that it had secretly caught Fujimura on video burying artifacts at the site earlier in October. At a press conference later that day, Fujimura admitted burying 61 of the 65 artifacts found at Kamitakamori and all 29 stone tools found earlier this year at Soshin Fudozaka, a site in Hokkaido. He says that these were the only times he had ever planted artifacts. Toshiaki Kamata, director of the institute, said other members of the team were unaware of the fraud and that the rings from the postholes and four of the artifacts are genuine. "At this point, I think we have to be pretty suspicious" about claims for the Kamitakamori site, says Peter Bleed, a professor of anthropology at the University of Nebraska, Lincoln, now on leave as a guest professor at Tohoku University Museum in Sendai. Bleed says he had been touting the importance of the site to colleagues. Now, "many of us are looking silly," he says.

A Defibrillator in Every Crowd

Gambling casinos may be an unusual research setting. But with lots of unhealthy middle-aged males spending long periods of time there, they provided Terence Valenzuela of the University of Arizona in Tucson with an ideal venue to test the efficacy of a new, easy-to-use, lightweight, automated defibrillator. His positive results, combined with new federal legislation to foster the use of defibrillators, offer hope of sharply improving the odds for victims of cardiac arrest.



A good place to have a cardiac arrest.

In 30 casinos around the country, Valenzuela and colleagues trained security personnel in the use of the machines, which monitor heart rhythms and regularize them with shocks. Ventricular fibrillation—when the heart's electrical system goes haywire—is the most common cause of sudden cardiac arrest, a major killer in the U.S. and almost always lethal without immediate intervention. Unlike heart attacks, which give warning signals, Valenzuela says "cardiac arrest is when you're standing there conversing and all of a sudden you collapse in a heap and have no pulse."

Over 32 months, the casinos treated 148 collapsed clients, 70% of them male and 105 with ventricular fibrillation. The mean time from collapse to defib was 4.4 minutes. Of those treated within 3 minutes, almost 74% survived, compared with about half of the rest. Of the 105, 56 lived to gamble again.

"Everybody in my line of work is now looking" for places, such as airplanes, retirement communities, and sports stadiums, to put defibrillators, says Valenzuela, whose report was published in the 26 October *New England Journal of Medicine*. Congress is hoping to speed up the trend: Last month it passed a Cardiac Arrest Survival Act that encourages the deployment of defibrillators in federal offices and limits the liability of "good Samaritans."

CREDITS: (TOP) TOTAL ENVIRONMENT CENTRE, SYDNEY; (MIDDLE) PHOTO COURTESY OF HIROSHI KAJIWARA; (BOTTOM) PAUL SANCYA/AP PHOTO