

# From mothballs to mobilization: Taking the salt out of sea water

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The United Nations estimates that 1.1 billion people across the globe lack access to sustainable, clean drinking water and that 1.6 million children will die each year because of that lack of access. How can science help provide more drinkable water for a growing population on an Earth with limited fresh surface-water and groundwater resources?

Geoscientist David Kreamer of the University of Nevada, Las Vegas, noting that at least 37% of the world's population lives within 100 kilometers of a coastline, says that desalinization -- removing salt from ocean water to create fresh water -- is a practical way to meet the growing human need.

Desalinization is not a novel idea, says Kreamer. U.S. Navy aircraft carriers, for example, have had to generate fresh water to help sustain large crews while at sea for six months or more.

In fact, says Kreamer, such ships are ideal platforms for desalinization. And what better use for large, mothballed ocean vessels currently dry-docked or cluttering working harbors? The U.S. alone has a fairly large mothball fleet, including U.S. Navy inactive ships and the U.S. Merchant Marine reserve fleet. Kreamer's work examines the practicality of recycling decommissioned U.S. Navy vessels, especially with an eye toward using old aircraft carriers, to become mobile desalinization plants.

When ships meet the end of their service life with the U.S. Navy, they

are often quite serviceable. Kreamer notes that the decommissioning of the John F. Kennedy multipurpose aircraft carrier in August 2007 saved the Navy about 1.2 billion U.S. dollars, yet the vessel itself is still sea worthy and could be a good candidate for work as a desalinization plant. A change in purpose would save money in other areas as well. The John F. Kennedy aircraft carrier had a crew of about 5,200, but says Kreamer, "You wouldn't have as many people working a desalinization plant."

In his talk on 5 October at the 2008 Joint Meeting of The Geological Society of America, Soil Science Society of America, American Society of Agronomy, Crop Science Society of America, and Gulf Coast Association of Geological Societies, in Houston, Texas, USA, Kreamer will take a practical view of the advantages and disadvantages of using formerly mothballed ships to serve as mobile desalinization plants across the globe.

Kreamer will also address how voyaging desalinization plans can (1) help reach more people in need – "they could outrun a hurricane and steam within days to an area of natural or man-made disaster"; (2) harness wind, wave, and solar power to help sustain operations; and (3) meet cost, center of gravity, and environmental concerns.

Source: Geological Society of America

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